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PEDIATRICS

Vol. IV.

JULY 1st, 1897.

No. 1.

ORIGINAL ARTICLES.

CONTRIBUTION TO THE DISEASES OF THE SKIN OF THE NEW-BORN.*

By PROF. DR. ESCHERICH,
Gratz, Austria.

THE skin of the child during the latter part of fetal life, and especially in the beginning of extra-uterine existence, undergoes deep-seated histological and functional changes, of which we have up to the present time, only very little knowledge. Obviously, the dry, cold atmosphere and contact with the clothing, act as irritants to the tender epidermis, which until now has been protected by the vernix caseosa and immersed in the amniotic fluid. In addition, we have greatly diminished pressure on the abdominal surface, and deficient functional activity of the nerves of the blood-vessels. Clinically these factors are manifested in an active hyperemia of the integument of the new-born, which leads to a general erythema, swelling and loosening of the cell layers, increased secretion and other developmental processes, and finally terminates, in the third or fourth week after birth, in a physiological desquamation of the skin and mucous membranes. In the course of these changes, which may be observed in every child, though in varying intensity, morbid disturbances, probably representing only an unusual prominence and exaggeration of single traits, are most intimately connected with these physiological processes. We feel justified, on account of

* From the Pediatric Clinic of the University of Gratz.

the rarity of these diseases and the contradictory views expressed in literature, in giving an account of some of them.

I. Dermatitis Exfoliativa.—Communications on this disease, which was described by Ritter in 1878, are so few that I am led to suppose that its frequent appearance is confined to certain localities. I have myself seen the first cases in Gratz. At the Fifth Congress of Dermatologists in 1895 I made a short report on these cases. I will now give a picture of this disease, based on the six cases which have been observed at my clinic. The last one was of less severity than those previously reported in 1895, and it is the only one that recovered. The disease, in the latter case, by preference attacked the extremities, and on the trunk the desquamation occurred only in a moderate degree.

Of the cases reported by Ritter, about 50 per cent. recovered. Of the five children reported by me in 1895, three were boys and two girls. All of them were between the ages of seven and fourteen days, and most of them weighed less than normal. Vesiculation was said to have taken place during the first days of life, sometimes on the face, occasionally on the trunk or the extremities. This was preceded, as could be seen after the children came under observation, by a dark, mottled erythema on the rose-tinted skin of the baby. At the same time the skin showed a most peculiar and characteristic condition. Its appearance was transparent and thickened, and the surface was velvety, as though the horny layer had become swollen and macerated from the lengthy application of a warm and moist poultice. The union of the horny layer with the corium seemed loosened to such an extent that light pressure with the finger was sufficient to move it on the corium and produce a small fold. The coherence of the epidermis, however, remained undisturbed, or was very slightly encroached upon, for if one of these folds were picked up and torn through, the epidermis could be removed in great shreds. Below this, the reddened corium could be seen. This displacement and loosening of the horny layer could be produced by other mechanical causes, as pressure from the bedding or from folds of the napkin, or by stretching of the skin at the bends of the joints, etc. The epidermis in these localities is, therefore, found early to be torn or raised.

The process which leads to the so-called vesiculation does not seem to differ from that just described, except that there is no known external cause for the raising of the horny layer, and that there is a serous exudation into the softened layers. The quantity of this exudation is small and a tense swelling is never seen, although there may be a slight fulness of the depending part. The fluid may be absent or may have disappeared, so that an exploring needle would enter into a hollow cavity filled with air. The shape and size of these vesicles is varied, ranging from the size of a lentil to that of the palm of the hand, so that the whole back of the head, one-half of the anterior surface of the abdomen, or a hand or a foot may be included in a single exfoliation. In one case we were able to observe the beginning of the affection on the forehead. A number of small partly filled vesicles with clear contents first made their appearance close together. These became confluent on the following day, ruptured, and finally desquamated. I have in my possession the intact glove-like covering from both hands of a child, 12 days old, in which even the nails peeled off. It reminds one of the pieces of skin occasionally met with in scarlet fever. The vesicles are usually of short duration, because the weak integument easily tears and allows the fluid to escape. The moist corium then is seen, and the shreds of skin are rolled up into cord-like masses. In non-fatal cases a new, tender epidermis is formed over these uncovered places, and the upper layers of this new epidermis may be again cast off, as a fine scaly desquamation. Only gradually does the skin become pale and more normal.

This condition extends in a few days over the whole body and the child has the appearance of being flayed. (See Figures 1 and 2.) Healing begins in the parts first attacked.

The aspect of such a case is so peculiar that any one who has seen the photograph will be able to recognize the condition without difficulty. Especially characteristic is the displacement of the horny layer over the corium, and the rolling up of the loosened shreds of skin into cord-like masses. The result of five cases of dermatitis exfoliativa observed by me was fatal. Three cases died at the height of the process, on the sixth, tenth and eleventh day of the disease; the others died in the third week, when the manifestations of the disease

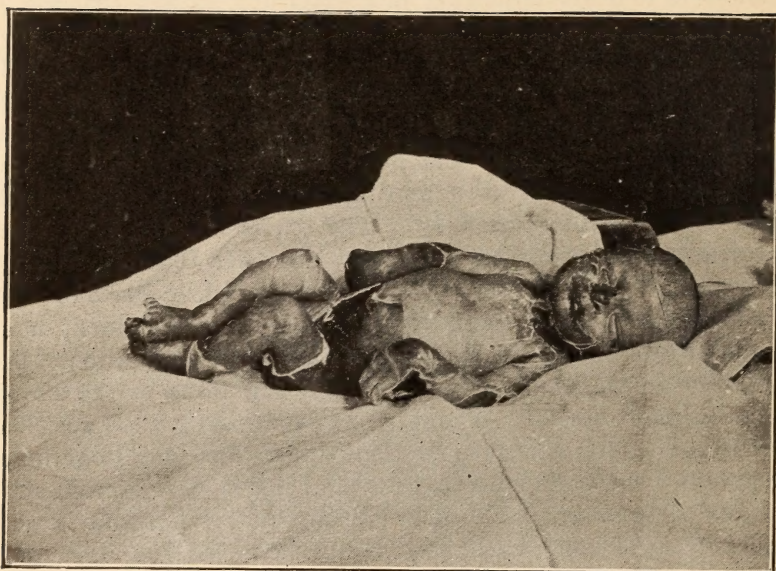


FIG. 1.—Dermatitis Exfoliativa. Infant, twelve days old.

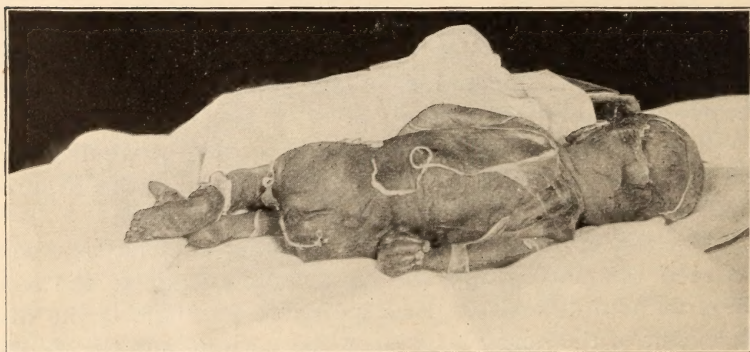


FIG. 2.—Dermatitis Exfoliativa. Infant, twelve days old.

on the external skin were already in the stage of retrogression or healing. From this we may conclude that the changes in the skin and the consequent loss of heat and fluid were not in themselves the only cause of death, but that other complicating factors also exerted their influence. Only one single case took an afebrile course. The other cases (four) presented irregular rises in temperature and intestinal catarrhs; in two of them changes at the site of the umbilicus were present, and in one a lobular pneumonia developed; all being complications which according to our present views may be the result of a septic infection of the new-born. My own experience therefore leads me to the conclusion, that, as Ritter has already observed, dermatitis exfoliativa is in many cases developed as the result of a septic general infection. Other etiological factors, in particular syphilis of the parents, were not present, except that all the cases observed by me occurred during the warm or hot season (May to August).

The nature and cause of the disease are therefore unknown. The fact, however, of its exclusive appearance during the first days or weeks of life, is sufficient proof that the hyperemic and swollen condition of the skin of the new-born presents the necessary predisposing condition to its occurrence. In any case the seat of the changes is to be found in the layers of the rete malpighii. In the latter occur the swelling and loosening of the upper layers of the epidermis. The vesicles are formed from the transudation of serum into the pores. A more minute histological examination, which is at present being made by Dr. Rille, assistant at the clinic of Neumann in Vienna, and formerly at my clinic in Gratz, will decide whether or not we have to deal with an inflammatory condition, as the name implies.

Treatment consisted in carefully protecting the children against cold by placing them between warming-bottles or in the *couveruse*. As long as vesicles continued to form, or to rupture, the child was enveloped in cloths saturated with a mixture of oleum lini and aqua calcis. As soon as the weeping of the skin ceased, Lassar's paste and powdered zinc-oxide were applied. Bathing and sponging of the child was discontinued during the whole time of treatment.

II. Cutis Sebacea (Ichthyosis Congenita).—The tendency of the skin of the infant to seborrhea is well known, and

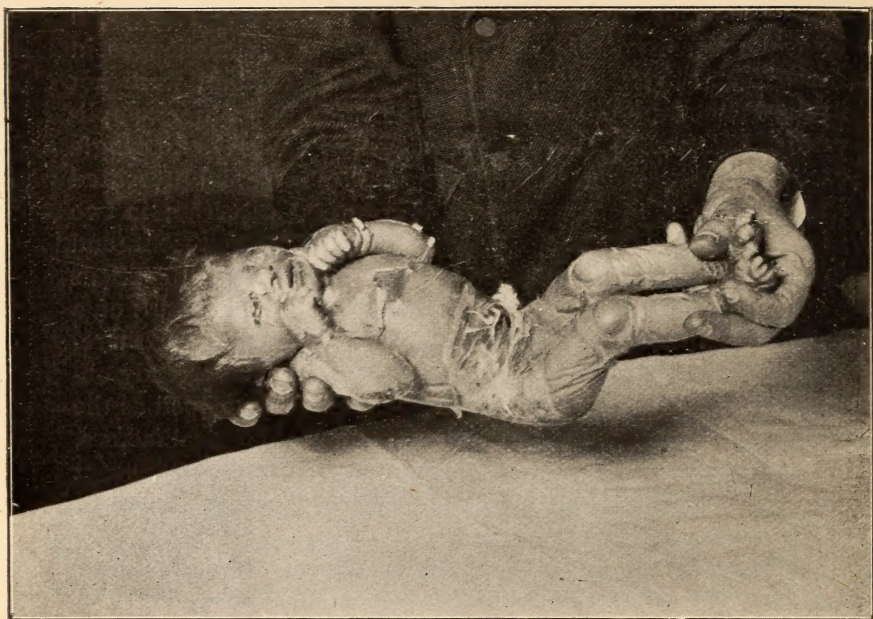


FIG. 3.—Congenital Ichthyosis. Infant, two days old.

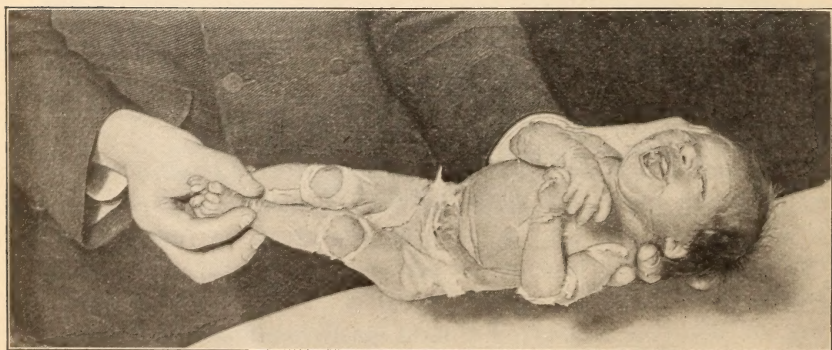


FIG. 4.—Congenital Ichthyosis.

is to be viewed probably as a continuation of this function from fetal existence. On the hairy scalp it is almost a physiological condition of the first year of life. It may appear on different parts of the body and lead to the formation of thin, shiny scales. The underlying skin is pale, at least in the beginning; but an irritation followed by a secondary eczema may occur from the obstruction to the normal exhalations from the skin, the accumulation of dirt, etc. This condition usually disappears of its own accord during the first weeks after birth, if the scales are frequently removed by washing with a warm solution of soap. The accompanying eczema is rapidly cured with Lassar's paste. The highest and most remarkable degree of this condition is found in the affection described and portrayed by Hebra-Kaposi under the name of *ichthyosis congenita*. In these cases the increased secretion of vernix continues after birth, and the sebum dries up into a horny mass which encompasses the whole child like a coat of mail. Its surface is firm and elastic, of a yellowish to a brownish-red tint, shining as though varnished, and Kaposi compares it to the skin of a roasted suckling pig. Its hardness and brittleness renders motion difficult or even impossible, and gives to the body the appearance of a statue, and to the face a mask-like expression. This coat of mail is absent only at the natural orifices, the mouth, eyes and anus, and on the hairy scalp. The skin of the joints present fissures which permit the recognition of the lamellar structure of the sebum covering. Large adherent lamellæ, which still show on their under surface the warty protuberances corresponding to the mouths of the sebaceous glands and the lanugo, can be removed. The underlying skin appears slightly reddened, shining, and soon becomes again covered with these seborrheal scales.

The shedding of the skin takes place gradually, and, relieving the child of its mail-like envelopment, passes into a general seborrhea of the usual type. The disease, as a rule, takes a favorable course, but these children are liable to succumb to intercurrent diseases.

Figures 3 and 4 show the child, M. Schmied. It was admitted to the clinic December 29, 1894, on the second day after birth. The parents, the brothers and the sisters are healthy. The yellowish coloration and firm consistence of the

skin was noticed at its birth. The child is of normal size and of well-rounded form. The whole body, with the exception of the hairy scalp, is covered by a parchment-like rigid skin which is beginning to peel off at the joints in great shreds, presenting under it the red, shining skin. This parchment-like layer is hard to the touch, crackles on pressure and impedes the movements of the child to such a degree that it lies nearly immovable with flexed arms and slightly flexed legs. Nevertheless, the child is able to cry and suck with great power. The eyes are narrowed, forming slits and presenting some ectropion. The ears are small, adherent to the head and encased in a layer of sebum.

In the course of the following days, the dry, horny layer nearly entirely peeled off. The skin appears rose-tinted, shiny, and covered with scales. The umbilicus secretes some pus. There is an occasional rise of temperature to 39.7 C. The stools are slightly dyspeptic. Scaling rapidly decreased under the use of baths with soapy water. On January 13, 1895, the child was dismissed from the hospital; bodily weight has decreased from 2300 to 1910. On January 24, at the age of twenty-eight days, the patient died, probably from a chronic sepsis which originated at the umbilicus.

III. Pemphigus Neonatorum.—This disease occurs more frequently, and is better known than either ichthyosis or dermatitis exfoliativa. These partly filled, large vesicles make their appearance on the unchanged skin during an apparently healthy condition, are generally confined to the trunk, and last from two to three weeks, including recurrences. The lesions are very characteristic. Dermatitis exfoliativa can be mistaken for it only in the very beginning. In this respect it is noteworthy that the vesicles in pemphigus make their appearance in different localities, are not very close to each other, they only rarely become confluent, and the skin in their immediate vicinity does not show any displacement of the epidermal layer on the corium.

It has been attempted to trace the origin of pemphigus neonatorum to those changes which the skin of the new-born physiologically undergoes in the first days of life. Bohn, in particular, advances this view in his treatise on diseases of the skin, in Gerhardt's Handbook of the Diseases of Children. He believes that the special sensitiveness of the skin is mani-

tested among other ways in the early physiological desquamation; is the reason that any external irritation will suffice to cause the formation of vesicles on the skin of the new-born. For this reason he separates pemphigus neonatorum from the acute idiopathic pemphigus of older children. However alluring this supposition may seem to the learned physician, I am, nevertheless, unable to subscribe to it. Opposed to this theory, we have the important fact that pemphigus does not show a preference, as does dermatitis exfoliativa, for the first days of life, when the most active changes in the skin take place. Although the disease in the greater number of cases begins within the second week after birth, there is no sharp boundary line tending upward. I believe with Steiner, that I have seen typical pemphigus vesicles in children of two, five, and eight months of age. Of course we must consider the differential diagnosis between impetigo contagiosa, for it is often difficult and may be impossible to distinguish them. I do not hesitate to state that I have now some doubts as to the status of the epidemic of pemphigus which was described at the time (*Verhandlungen* 1896). I shall, therefore, present the photograph and history of the disease of the first and second case, together with a short description of the extension of the affection at the hospital.¹

Niederer Therese, eight months old, was fed at the breast for seven months, and then artificially nourished. Eight days ago, the mother discovered that the back and the abdomen of the girl was covered with large bullæ. She returned home with the child and the three-year-old sister of the patient contracted the same eruption. Both children were admitted to the hospital on August 23, 1893. The condition of the child, which was well nourished and otherwise normal, can be seen in the photograph (Figure 5). Both face and trunk are covered with blebs, varying in size from a lentil to a Kreuzer. The bullæ are situated on a normal skin and when recent, contain a turbid serous fluid. The majority of the bullæ have already ruptured and in their place the dark-red corium shows. In other places, dry scabs are found under which the skin is pale. Scattered among these are impetigo pustules. The palms of the hands and the soles of the feet are perfectly free from bullæ.

During the following days a few after-crops appeared and once a rise of temperature was observed. Beginning with the 26th of August there was gradual healing and the child was dismissed cured on September 9.



FIG. 5.—Impetigo bullosa ; æt. eight months.

In the patient's sister, who was treated in the hospital at the same time, the eruption was most extensive on the face and back.

From these cases a small epidemic took its starting point, and ten children, exclusively the youngest in age, were attacked. The infection seemed to spread by means of the clothing, sponges, and electrodes. The extension of the bullæ, however, always remained limited, chiefly to the inner surfaces of the thighs and to the back. I will add the photograph (Figure 6) of a child with a tumor of the sacrum, who contracted the infection in the hospital.

The epidemic died out of its own accord in a few weeks. No grave nor even disagreeable symptoms were observed in any of them. Culture of the contents of the recent bullæ resulted in the production of yellow and white liquefying staphylococci, and the inoculations made with the pure cultures as well as from the contents of the bullæ gave no results.

We have now reached that point of view which, in recent times, has given the greatest satisfaction in the explanation of pemphigus neonatorum: the search for specific bacteria. Although the disease usually makes its appearance sporadically, still there have been repeatedly observed marked endemics and epidemics in nurseries and lying-in hospitals, for example by Hervieux, Olshausen, Winkel, and others. Demme, Strelitz, and Almquist, with the aid of modern bacteriological methods were able to demonstrate the yellow and white staphylococci in the contents of the bullæ, and I myself have also repeatedly obtained cultures of them.

Almquist and Strelitz made inoculations on themselves and demonstrated the development of true pemphigus bullæ at the point of inoculation. Notwithstanding these positive results, however, the specific action of these cocci, *i. e.*, their distinctiveness from the common pyogenic grape cocci, seems to me in no way proven, and the trivial differences in their culture, to which Almquist refers, do not seem sufficient to me to base such an assumption on. The latter seems to me, however, not only unnecessary, but very detrimental to the proper comprehension of the etiology and pathogenesis of the disease. The pathogenic staphylococci are sufficiently well known as the cause of various skin diseases, as impetigo, furunculosis, and sycosis. The number of diseases and symptoms caused



FIG. 6.—Infant, four months old, with sacral tumor. Infected with Impetigo Bullosa.

by them is continually increasing. The skin of the infant, on account of the tender horny layer and its contact with the soiled diaper, is in a peculiar manner disposed to their invasion, and I have pointed out in an earlier work (Zur ætiologie der multiplen Abscesse im Säuglingsalter: *Münchener mediz. Wochenschrift*, 1886, No. 51 u. 52) the rôle played by the pus-cocci in the origin of the suppurative processes, which run their course in the deeper portions of the cutis. Should the infection extend as far as the prickly-cell layer of the epidermis, we have the disease called Wilson's or Bockhart's impetigo, a disease frequently met with in children. Not rarely do we find scattered among the pustules, the younger the child the oftener, large, slack bullæ, filled with turbid contents, which can in no way be distinguished from those of pemphigus neonatorum. Dohrn had already made the correct observation that in the new-born vesicles are formed in the neighborhood of small abscesses which discharge their pus on the surrounding skin. I have, on the other hand, observed in cases of long duration, the development of impetigo pustules and of folliculitis, exclusively in general septic conditions. It would be doing violence to common sense to assume that these processes which run their course together and follow each other are due to different specific causes. Clinical observation is decidedly in favor of the classification of this so-called pemphigus neonatorum with the group of Wilson's impetigo, in which certain conditions of the skin cause a greater serous exudation and an extensive loosening of the horny layer from the corium.

Bacteriological investigation, which has discovered in it the same exciter of disease as in impetigo and folliculitis abscedens, justifies this assumption.

This relation of the so-called pemphigus of the new-born and young children to the group of impetigo, or at least the necessity of considering it apart from the usually fatal affection of pemphigus of the adult, has been dwelled on by others. The time seems now to have arrived to drop this confusing name, and to substitute for it one which takes cognizance of the above mentioned etiological and clinical view. I would therefore propose the name of "*Impetigo bullosa*," which may be qualified by the addition of the word "*neonatorum*," or more correctly, "*infantum*." If we make this conception a basis,

we can understand without difficulty why the so-called pemphigus neonatorum hardly ever appears before the second week after birth, and only in a descending scale during the later months. It will also explain the transitions and mixed forms of simple impetigo, as well as its occurrence now in a sporadic form and again in an epidemic and endemic manner.

The prognosis, as long as the disease is confined to the upper layers of the skin, is a favorable one; the appearance of septic processes, however, is not excluded, on account of the disposition of infantile life to them. A number of my newborn patients suffering from pemphigus have been destroyed by catarrh of the bowel and furunculosis after the original affection had run its course. I would recommend the dry treatment in accordance with the rules followed at the dermatological clinic at Gratz, as the most accurate and effective therapeutical measure. Baths are as much as possible avoided, the skin of the affected parts are washed with soap and water, and lightly annointed with a two-per-cent. ointment of hydrargyrum præcipitatum album. In this way the contents of the ruptured bullæ are quickly absorbed and disinfected and the surrounding skin protected against infection.

SPASMS DUE TO ADHERENT PREPUCE IN AN INFANT THREE MONTHS OLD.*

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President of the Faculty and Clinical Lecturer on Diseases of Children in
the Hospital College of Medicine, etc.

THE patient, a male infant, aged three months, is asleep and breathing quietly, with its mouth closed, showing that there is no impediment to respiration; the alæ nasi are not moving, showing that there is no interference with the respiratory system; if there were any obstruction in the nasal or respiratory tract the alæ nasi would be moving and the mouth might be open.

The anterior fontanelle is depressed, which shows that the child is below the level of health. This is one of the most im-

*Abstract of a lecture delivered at the Hospital College of Medicine.

portant marks of disease in the infant that we have. It is also one of the best methods of taking the frequency of the heart beat, and in infants it is much more satisfactory than the radial pulse. In this baby the pulsations are 110 to the minute, and continuation of the examination shows that the coronal suture is open as far as the beginning of the forehead. The depression of the fontanelle is particularly diagnostic of a depressed condition of the system.

The mother calls attention to an eruption on the back of the child's head, which is an eczema, due to irritation, just as we might have an eczema from irritation elsewhere on the body, especially such parts as are subjected to moisture. This is of no special significance, yet careful mothers may worry a great deal because of their children having a little moist eczematous rash. The mother comes very much depressed about her baby because it has a little spot over the fontanelle which she tries in vain to wipe off. It looks to her like a small particle of dirt, but it is utterly impossible to eradicate it. The truth of the matter is that it is a little sebaceous exudation, and this probably led to the name of this opening in the skull, the fontanelle—a term taken from fountain or spring, and the accompanying exudation of moisture probably led the older writers to adopt the name by which this opening is still known.

The mother states that this child has spasms occurring more or less frequently, though with no degree of regularity; that these spasms come on only during the time the child is awake; that he sleeps quietly and peacefully, and seems otherwise unaffected. We are therefore led to institute search for the source of the irritation, as we know that spasms, even in the infant, do not occur without a definite cause.

As the genital organs are most frequently concerned in the causation of spasms of infancy, this child's genitalia are examined to see if any condition exists to account for the trouble. There is found a contracted and adherent prepuce. The portion extending beyond the glans penis is fully three-quarters of an inch in length, and when an attempt is made to turn it back it is almost impossible to find the opening, and when detected and dilated quite an accumulation of smegma and urine is seen. The foreskin is inflamed and slightly excoriated on the inner surface.

We have then in this case marked phimosis, the prepuce being closely adherent to the glans, and we need not search further for the cause of the spasms. It is plainly a case due to reflex action from the irritation of this elongated and adherent prepuce, and the consequent accumulation of smegma, etc. A circumcision will afford complete relief.

This case will serve to impress the importance of making a thorough examination of all infants who are brought to you with the history that they have spasms. The source of irritation in a large percentage of them will be found about the genital tract.

SCHOOL HYGIENE—EFFECTS OF FOUL AIR, OVERCROWDING, AND IMPROPER HEATING IN SCHOOL-ROOMS.

By J. H. VOJE, M.D.,
Oconomowoc, Wis.

PURE air is as essential to the animal economy as good food and exercise. The human body is exceedingly sensitive to impure air, and if we are compelled to breathe it during the growing period of childhood, the bad effect would last for life and could never be eradicated.

Therefore the responsibility of school-boards and authorities who provide school-buildings is very great, and it is imperative that such officers should have a full knowledge of all questions of hygiene. At least one medical man who has a thorough knowledge of hygiene and sanitary science should be a member of every school-board.

Numerous statistics and observations on the effect of foul air and air deficient in oxygen have been collected and printed; it would, however, be beyond the scope of this paper to go into details; suffice to say, that when the amount of air for each child in a room is not sufficient, an excess of carbonic acid, moisture and organic matter is produced. Besides, the dust and dirt carried in and deposited on the floor, shelves, window casings, maps and book-cases, are dispersed and agitated again and again by the active movements of the children.

The proportion of carbonic acid in the pure open air is found to be 3.2:10,000, 7:10,000 is found to be about the limit

to which the air may be mixed with the gas without becoming harmful.

In a certain school-room the proportion of carbonic acid was found to be, before the morning hours, 22.1:10,000—before recess, 68.7:10,000—after recess, 62.3:10,000—after morning hours, 81.1:10,000—before afternoon hours, 55.2:10,000—and in an overcrowded, not sufficiently ventilated, school-room, ten times more organic matter was found than in the open air, and also 77 per cent. moisture, about the same as in a damp basement.

The floor dust was found to contain 517,000 micro-organisms to the gramme, and the dust from the top of cabinets, shelves, etc., 623,000, mostly of the order of the schizomycetes.

Should such a school also be provided with an imperfect heating apparatus, which allows of sudden changes in temperature and gives off smoke, or carbon mon- or dioxide, matters are very bad indeed.

The modern heaters for public buildings, schools, etc., are, however, generally quite perfect—if they were operated as intended by the manufacturer. Teachers as a class are often neurasthenic and anemic, requiring much heat, much more than is wholesome for the class, and therefore the school is overheated, or the thermometers and regulators are not often enough and carefully enough observed, from sheer indifference.

Should all these factors—overcrowding, improper ventilation, and defective or improper heating—be combined in a school, the effect would soon be very apparent and lasting.

If the above-mentioned conditions be brought to bear upon the organism of a child, the greatest immediate danger is the lowering of its vitality.

Tissue change becomes imperfect for want of oxygen, autotoxines are formed in the body and the power of resistance against infection or contagion is very much lessened. Diphtheria, typhoid, scarlatina, etc., are therefore easily spread, and scrofula, tuberculosis, eczema, etc., easily acquired.

But saddest of all is the remote effect of these unfavorable conditions on the child's system, especially its nervous system; here the foundation is laid for the future neurotic and neurasthenic; hysterical tendencies are increased and made manifest, thus making both male and female unable to cope with the future battle of life.

The very part—the intellect—which is to be educated and aroused in school, is hampered by such conditions. The brain cells and nerve centers are surrounded by imperfectly oxygenated blood and autotoxines; they cannot act as they should. Such children will be dull and of slow perception, will be languid and listless, will have a poor record, or be good or fair for a while, and then break down; the teacher of such a school will also suffer and cannot do his duties without great effort.

Of late a number of experiments have been conducted to show how the brain, as the site of our intellect, is affected if taxed under various conditions.

Under unfavorable conditions, such as are found in a badly ventilated, overcrowded and carelessly heated school, the brain would naturally tire the soonest and labor under great difficulties.

A number of children or students were made to add or subtract simple examples or memorize easy sentences of poetry.

The experiments were conducted in such a way that after each forty-five or fifty minutes of work, ten to fifteen minutes of rest and change of air were put in. The results were that under fair circumstances the intellectual work was quite satisfactory during the first hour, and even an improvement would be observed during the second hour, with a number of scholars under the training; the next hours, however, the brain showed signs of exhaustion, and mistakes in figures, writing, grammar and memory became numerous, most so during the fifth and last hour.

Under unfavorable circumstances the signs of giving out would become apparent very much sooner, and the results would be absolutely unsatisfactory during the last hour.

The difference in vitality and the capacity of the different brains was also shown, a very important fact, as it allows of a classification of the scholars. Children who have no capacity for difficult studies can be selected out and need not be tortured with impossible tasks.

These experiments further showed that vigorous exercise, such as turning or other gymnastics or games, were no recreation, but on the contrary, they added to the fatigue of the nervous system and brain, but that rest in the open air and

good food taken between the hours of brain work, acted as restoratives and increased the capacity of the intellect.

Most parents strive to at least provide a good education for their children, and justly so; the fact can, however, not be denied, that the conditions under which such an education must generally be acquired at present, are not the most favorable, and it is no exaggeration if we state that no child passes the period of school life unharmed both physically and mentally, and that the lasting mental and physical injuries received during school life and in school are generally greater than those acquired at a more or less poorly conducted home life.

As a summary of the foregoing it may be stated that:

1. Overcrowded, badly ventilated and improperly heated schools are hotbeds for the spreading of disease, both acute and chronic.
2. The very element for vigorous growth in childhood, a free circulation of constantly and perfectly oxygenated blood, securing rapid tissue change and the burning of food stuffs, is withheld in such schools.
3. The injurious effect of the sojourn of children in such unfavorable surroundings, together with the forced quiet position during a number of hours daily, is lasting and leaves an impression for life.
4. Interposed vigorous games, gymnastics or exercises between hours are not beneficial, but rather injurious, as they add to the mental fatigue a physical one, thereby still more retarding recuperation of the nerve centers.
5. Children studying under such unfavorable conditions will not reach by far their maximum education, as their power of attention, comprehension and memory is very much lessened on account of impoverished blood, a blood not sufficiently oxygenated, and also charged with autotoxines, which circulates around the nerve centers and through the brain.



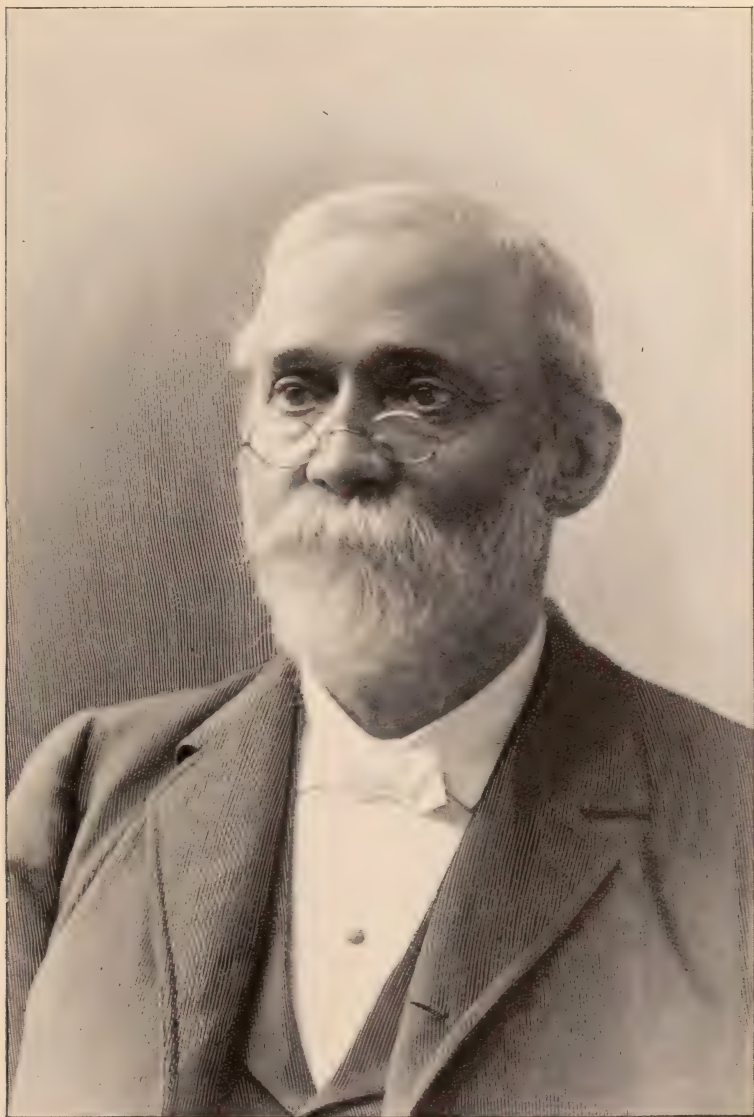
IN MEMORIAM.

J. LEWIS SMITH, M.D.

DR. J. LEWIS SMITH was born in Onondaga county, New York, on October 15, 1827, and died at his residence, in the city of New York, on June 9, 1897. He descended from a family distinguished in revolutionary annals, tracing his lineage back to John Smith, who was one of the founders of the New Haven Colony. His grandfather, Job Smith, was an officer in the army of the American revolution. Dr. Smith himself was the youngest of five children, and his father was prominent in local politics in Onondaga county, having served in the Legislature in 1829. His boyhood was passed on the farm which his father had left his mother, and there he toiled helping in her support. Even in those days the energy and earnestness of character which so strongly developed as he attained maturity were marked characteristics. His kindness of heart is still spoken of amongst the residents of the village where he passed his boyhood. His early education was such as the village school of those days offered. He was graduated in arts at Yale University in 1849, in the same class as the famous President Dwight. The study of medicine was begun under the tutorship of Dr. Caleb Green; he attended a course of lectures at the Buffalo Medical College, and through the influence of the late Dr. Austin Flint served for one year in the chief hospital of that city. In 1853 he received his medical degree from the College of Physicians and Surgeons in New York city, and at once began the practice of medicine there, a practice extending over forty-four years.

Dr. Smith was married in 1858, and had seven children, four of whom—daughters—survive him. One of his daughters married the late Frederick Warner, whose untimely death is yet regretted, and another Dr. H. C. Hazen. In 1889 he lost a very promising son, who had but just begun the practice of medicine.

During Dr. Smith's busy life in the city of New York he held the following official positions: Physician to the New York Foundling Asylum, Physician to the New York Infant



J. LEWIS SMITH, M.D.

Asylum, Consulting Physician to the City (late Charity) Hospital, to the French Hospital, to the Department for the Diseases of Children at the Bellevue Outdoor Poor Department, to the Nursery and Child's Hospital, to the Infants' Hospital on Randall's Island. On the death of Dr. George T. Elliot he was appointed Clinical Professor of the Diseases of Children, and he held the position up to within a year of his death.

Dr. Smith was a voluminous writer, and appended to this notice will be found a list of his chief contributions. From an early stage in his career he devoted himself chiefly to the diseases of children, fitting himself for the pursuit by intelligent study, not alone at the bedside but also in the post-mortem room. Added to this his love of children, his patience with them, his intuitive sense of their needs, and it is not surprising that we find that his classical work on the Diseases of Children passed through eight very large editions, was translated into the Spanish, and remains to-day, in its accurate portrayal of symptom, in its deep knowledge of therapeutics, the favorite with student and the mainstay of general practitioner.

Dr. Smith was one of the founders and the second president of the American Pediatric Society, was President of the Pediatric Section of the Ninth International Congress, a Fellow of the New York Academy of Medicine, of the New York Pathological Society, of the County Medical Association, and of the American Medical Association.

So much for the public side of Dr. Smith's distinguished career. When we pass to the home side, to the side of which the great public and his medical colleagues knew but little, it is approached with diffidence, for such was the innate modesty of the man, such was his abhorrence of self-praise, that we hesitate, even now when he has passed to his reward, to mention that which he was the first to conceal. In this case, however, there is indeed nothing but good to be said of the dead, and a pity it would be if at last the community and his colleagues should not gain an insight into the character of the man which secured for him the title of the good old doctor, and which caused a life-long friend to liken him unto the Beloved Physician. To properly appreciate the character of this man the present generation must remember that he began practice in the days when the poor were always with him,

when hospital and dispensary did not stand with wide open door ready to minister to all in want and in sickness. Furthermore, medicine had not become so much of a trade in the early days of his career, and the exigencies and the competitions were not so keen as they are now. Therefore Dr. Smith began early to go around and to do good irrespective of monetary consideration, and these methods he carried with him even unto his grave. Amongst the last acts in Dr. Smith's professional career we have learned that he spent hours at the bedside of a sick infant in a tenement house, giving money to the parents to assist them in their extremity while his wealthy clients were awaiting his arrival. No wonder that amongst the poor of this city he was looked upon as the *good* doctor, and all this irrespective of talk on his part or of knowledge by his right hand of that which his left was constantly doing.

Of gentle, yet most firm character, showing ever deference to the opinion of others and yet obstinate where his conviction urged him, devoid of personal fear, so that at midnight he went unattended to the most lawless part of the city to care for the pauper, of most kindly presence and loving demeanor, the poor of the west side of the city, amongst whom he loved to practise, mourn deeply his loss, for they will look far before they find such another unselfish friend and helper, and medicine has lost a rare type.

The business part of his profession Dr. Smith almost entirely ignored, leaving such matters, in the latter part of his life, even to his coachman. His wants were few and he found his chief happiness in the good he could do. Yet the emoluments he received from the wealthy class were large and his life was spent in the plain and simple comfort such as a man of his type would alone seek for. He was naturally of a most hospitable disposition, and entertained those who called on him after a most charming fashion, making the stranger within his gate feel at once at home. Aside from his professional cares his chief love was for his home, and those whose deep privilege it was to see him, surrounded by his family, carry in mind a picture suggestive of patriarchal times, when the head of the family was beloved to love and to cherish in turn.

With the passing away of Dr. Smith the community loses well nigh the last of the old time physicians. Whilst a specialist, he was still a general practitioner, realizing that only

thus could he do his best in his specialty. His clinical lectures were of the most attractive type, usually unprepared, and yet clear, concise, searching, influential on the minds of his hearers as regards the interdependence of the organs one on the other. His influence on his pupils was therefore a deep and lasting one, and men scattered wide over this country remember still the knowledge acquired from him.

Dr. Smith's death, even as his life, was gentle and peaceful, and he passed away to hear the words of good cheer, so richly deserved, "Well done, thou good and faithful servant!"

EGBERT H. GRANDIN.

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EDITORIAL.

THE INFECTIOUS NATURE OF ACUTE POLIOMYELITIS IN CHILDHOOD.

THAT acute poliomyelitis is one of the most frequent and distressing nervous affections of early childhood cannot be denied, and its onset is often so sudden and occurs so commonly in the midst of what seems perfect health as to lead many of the laity, and physicians ignorant of its character, to attribute the loss of power to some injury near or remote. Evidence has been accumulated for several decades which seems to prove the disease to be entirely separated from any such cause, and within the last few years very interesting and important clinical observations have been made which point conclusively to the fact that it is an acute infectious process which affects the cells lying in the anterior cornua of the spinal cord. All neurologists are familiar with that most instructive epidemic which occurred in Rutland, Vermont, in 1894, and which was so well observed and reported by Caverly in the *Medical Record* for the latter half of that year. In this, the largest epidemic so far recorded, no less than one hundred and nineteen cases occurred in the one summer and no less than eighty-five of them were under six years of age. Eighteen of the children attacked died as a result of the disease, which was certainly an extraordinary death rate, since a fatal result in the acute poliomyelitis of infancy is rare and usually results only from a very widespread distribution of the lesions, which in turn probably take place over a wide area only in very severe infections. As the population of Rutland at the time named was about 20,000, the proportion was about 1-150, and much higher than this if the adult population, which is practically immune to the disease, is excluded. Another instance of the infectious character of the disease, at least so far as its occur-

rence in epidemic is concerned, is that recorded by Medin in 1890, the epidemic taking place, however, in 1887. In the city of Stockholm, Sweden, on this occasion forty-four cases were observed between August 9 and September 23. Finally, we may call attention to another epidemic just recorded in the *Australian Medical Gazette* for April 24, 1897, by Altmann, of Fort Lincoln, S. A., in which fourteen cases occurred during March and April, 1895, in a comparatively limited population. No case of this disease had been met with in this district for eight years, and then only one isolated instance of the disease had been seen. So far as Altmann knows no case has occurred since then. In two families two children were attacked in rapid succession, and curiously enough all but one of the cases was above three years of age, although, as is well known, the disease commonly develops in children under this age. Another interesting fact recorded by Altmann, is the fact that the disease occurred almost equally in the two sexes, eight males and six females being attacked, a proportion of about 4-3, which is stated by Seeligmuller to be usual, although American authors usually assert that males are far more susceptible than females. Sinkler's well-known observations, showing the greater prevalence of the disease during the hot months, are also confirmed, for although this epidemic took place in March and April, these were hot months in Australia.

An analysis of the cases reported by Altmann shows that one patient suffered from urinary retention, a rare symptom. Another had facial paralysis, and four had hemiplegia, which is still more rare, for Seeligmuller only saw it once, and Dejerine and Huet have reported one case with autopsy. It is interesting to note in this connection that in the epidemic reported by Medin as occurring in Stockholm, the head and face symptoms were frequent, facial paralysis, abducens paralysis and loss of power in the hypoglossus being noted a number of times.

In Altmann's report he makes an interesting statement

which may or may not have a bearing on the development of the epidemic, certainly the coincidence is extraordinary.

In January the Port Lincoln District Council issued instructions that during the months of March and April simultaneous efforts were to be made in the whole district for the destruction of rabbits, which exist here in almost countless numbers. The general method adopted for this purpose consisted in laying phosphorized pollard, and about 200 pounds of white phosphorus were sold in the district. In all the houses (except in two instances) where the epidemic appeared phosphorus was being used. At the same time also several cases, in adults, of a mild form of acute phosphorus poisoning came under Altmann's notice.

The occurrence of these epidemics and of special cases presenting clear infectious manifestations seem to place the acute poliomyelitis of infancy among the acute infectious diseases without doubt, and all future epidemics of this character should be studied with the greatest care in order to elucidate the etiology and pathology of this most interesting disease.



EDITORIAL COMMENTS.

Dr. J. Lewis
Smith.

The death—a few days ago—of Dr. J. Lewis Smith leaves a gap in the ranks of pediatric physicians which it will be difficult to fill. One of the pioneers in his chosen specialty, he was for a long time—to the end, indeed—an active worker and a leader. Although far advanced in years, he stayed in harness, working at a time when other successful men are wont to relax their labors to enjoy a well-earned period of repose before setting out on the last long journey. He worked because he could not help it, because labor was to him what rest is to others—a pleasure and a recreation. His scientific passion would not let him stop at a time when medicine was making such strides.

His book, a medical classic and the guide for many thousands through the difficulties of pediatric practice, was his pride, and he revised it constantly, through successive editions, for nearly thirty years, not enduring to see it become obsolete in its teachings. He was conservative in his views and not ready to accept every theory simply because it was based on bacteriological deductions or possibly surmises. But his conservatism was of the right kind—the conservatism of an old man who has learned to wait, neither rejecting nor accepting, until the guesses of enthusiasts have been forgotten or have become established facts; but there was nothing in it of senile obstinacy or incredulity, and no one was more ready to accept joyfully the facts of true medical progress than was J. Lewis Smith.

A. M. A.

The meeting of the American Medical Association, in Philadelphia, during the first days of June, was undoubtedly one of the most noteworthy in the annals of the organization. Even had it not marked the

fiftieth anniversary of the society's birth, the gathering would have been a memorable one because of the sound, earnest, scientific spirit that permeated it and pervaded every meeting, not only of the general body, but of each of the sections. Amusements there were in plenty, lavishly provided by Philadelphia's citizens, lay and medical, but these, while accepted with the same hearty good will with which they were offered, were only by the way, and were not permitted to interfere with the main objects of the meeting.

The friends of the American Medical Association have sometimes feared for the society because of the internal dissensions which have more than once threatened its very life. The general sessions have at times resembled a turbulent ward primary, and the quarrels and political intrigues have almost prevented the delivery of the scientific addresses. The president of the Association needed to be as conversant with the laws of parliamentary debate as the Speaker of the House of Representatives, and the most skilful of reporters would find himself beaten by the mass of resolutions, exceptions, amendments, calls to order, motion of the previous question, and other forms of obstruction to business. But at Philadelphia all this was changed. The peace that fits so well the city of brotherly love descended upon the meeting, all differences were buried—or at least put out of sight for the time, and a convention of Christian Endeavorers could not have been more harmonious.

Dr. N. S. Davis. The place of honor was occupied by Dr. N. S. Davis, whose jubilee, equally with that of the Association, the meeting was held to celebrate. But it was his diamond jubilee, while it was the Association's golden jubilee only. The same year that saw Victoria ascend the throne of Great Britain and Ireland, saw Nathan Smith Davis take up his own life work. He soon felt the need of a

national society to bind together the profession of the country, and in large measure through his individual exertions the Association was established, and held its first meeting in Philadelphia in 1847. The only one of the four surviving original members of the society able to be present at the jubilee exercises, he was justly the recipient of the homage of those who had gathered to rejoice in his work. The Association owes much to him, for not only was he one of the leaders among its founders, but he has guided it ever since, and in times of doubt those who have been entrusted with the government of the body have ever instinctively turned to their Nestor, and, heeding his counsels, have brought their charge victoriously through its hours of peril.

The Philadelphia meeting was called the semi-centennial, but really to New York belongs the honor of being the birth-place of the American Medical Association. The meeting of physicians held in this city in May, 1846, was properly the first meeting of the Association, although it was then without name or other evidences of a formal organization. But it was born then and here—and not one year later in Philadelphia. A baby has no name and not much of a constitution the day he is born, but he's a baby for all that, and when he has grown to manhood, he counts back his years to the day he came into the world, and not to the time he received a name or first encased his nether limbs in knickerbockers.



SOCIETY REPORT.

PHILADELPHIA PEDIATRIC SOCIETY.

Stated Meeting, April 13, 1897.

A Case of Influenza, with Persistent Respiratory Failure, in an Infant of Four Weeks.—Dr. THOMPSON S. WESTCOTT reported a case of influenza with persistent respiratory failure in an infant of four weeks. The child had been fed artificially from the age of two weeks. When four weeks old he contracted influenza, from which several members of the family were suffering at the time. After several days, during which an occasional hoarse cough was the only symptom, the child became acutely ill with signs of a localized focus of broncho-pneumonia at the root of the right lung. Eight hours later there commenced a series of attacks, at first characterized by a slow spasmodic closure of the glottis, associated with slight general convulsive symptoms, and later by recurring spells of apnea preceded by slowing increasing cyanosis. Individual attacks yielded at first to the warm bath and flagellation, but later required, besides, cold effusion to the chest, more severe flagellation with strips of pasteboard over back, buttocks, and finally over cheeks and side of head; oxygen inhalations and artificial respiration by the Schultze method. Up to midnight of the first day 29 distinct attacks of alarming apnea had been counted, and during the next twelve hours fully as many, if not more, occurred.

The treatment embraced bromides at hourly intervals till complete relaxation was obtained, tincture of digitalis in half-drop doses every two hours, atropine sulphate hypodermatically in dose of $\frac{1}{160}$ grain about every three hours. After 30 hours, when it did not seem that there was any hope of recovery, $\frac{1}{2}$ grain of antipyrin, hypodermatically, was given, with what seemed to be immediate improvement, and after six hours the child was practically out of danger, except for the general weakness which threatened to render efforts at cough ineffectual. He made a rapid and complete recovery. Three doses of antipyrin were given, the last one about sixteen hours after the more severe symptoms had subsided, when the tendency

of cyanosis again became alarming. This was followed by a prompt and definitive cessation of all alarming respiratory symptoms. The only sequel of the disease was an alternating internal strabismus, which lasted for several weeks and then gradually disappeared without special treatment.

At the outset the attacks of respiratory suspension were spasmodic in character, apparently depending upon a condition of irritability of the laryngeal mucous membrane which, in older children affected during the recent epidemic, caused a cough closely simulating that of pertussis or the prodromal stage of measles. Later on, the increasing stupor and tendency to convulsion (accompanied by what was evidently centric failure of respiration and the residual strabismus) pointed to pressure at the base of the brain, probably quite limited in extent, and possibly to some extent involving the medulla.

DISCUSSION.

Dr. F. A. PACKARD said that this case was very interesting from many points of view, particularly in connection with the discovery of Guiteras and White, in the epidemic that occurred next before that of 1889 and 1890, of distinct lesions of the pneumogastric nerve. This would explain many of the symptoms present in Dr. Westcott's case.

Dr. WESTCOTT said that there was very little more to be said in connection with the case, except in regard to the point of the value of antipyrin in this particular case. It was quite possible that the child was beginning to get better before the antipyrin was administered. Looking at it now he was inclined to attach rather more importance to that fact than he was at the time when he began its administration. It seemed, however, as if there was no hope at all. No one expected the child to recover, and although he was usually rather hopeful about illness in children, he had about given it up. In fact, during the night it seemed almost cruel to keep up the heroic and somewhat brutal treatment to which this baby was subjected. He was aware that in children sometimes, especially in cerebral disease, marvelously rapid changes take place in the circulatory conditions. He remembered very distinctly some five or six years ago seeing a case of epidemic cerebro-spinal meningitis with Dr. Curtin. They saw the child one morning; it was absolutely comatose, and both left the house, having given

the child up. Within half an hour the father came to his office asking him to come back and see the child, as it was asking for something to eat. This child subsequently made a very satisfactory recovery. That was a lesson which he has never forgotten—never to give up a sick child until it is absolutely dead; and he thought this was a lesson that constrained him to keep up the treatment with this little baby as long as they did and which finally resulted very satisfactorily.

As to the point raised by Dr. Packard, he felt inclined to maintain, in view of the positive evidences of cerebral involvement and their rapid subsidence, in conjunction with the residual strabismus and the occurrence of at least one cerebrospinal convulsion, that the principal seat of the lesion was at the base of the brain, though the existence of some pneumogastric disturbance cannot be positively denied.

Dr. ALFRED HAND said that as Dr. Westcott had stated, he took charge of this case for a time, but, owing to the judicious treatment it had received, he had almost nothing to do except to watch the child. He saw but one of the attacks of respiratory failure, a very mild one, which seemed to be of centric origin. The wonderful effect of antipyrin in controlling the attacks also strengthens this view.

Natal Teeth.—Dr. E. E. GRAHAM presented the child and said: The child is about four weeks of age. It is breast-fed. The father is a German, the mother an American. They are both healthy and the family history is good. The tooth, which is a lower right central incisor, was noticed by the nurse a few hours after birth. The mother herself states that she saw it the following day and Dr. Irwin saw it on his next visit, so that there is no question that the tooth was present at birth. The tooth is rather badly formed, the cutting edge is slightly conical and it is rather a poor color. The child is a full term baby, fairly well nourished. I can find no evidence of any unusual bony developments, the anterior fontanelle appears to be of normal size and the child is apparently well formed as far as the thorax and upper portion of the limbs are concerned. The tibiæ are quite considerably bowed. This is the only pregnancy and there is no history of miscarriage. The mother is 23 years of age, father 25 years of age. I can find no tubercular or specific history. The father admits the use of perhaps

more than a moderate amount of liquor and tobacco. One of the interesting facts in regard to the history of the case is that the father claims that either he or one of his brothers also had teeth at birth. It is a family record that one of the children was born with teeth. Curiously enough, the mother claims the same thing, that either she or her sister was born with a tooth. The tooth is rather loose and probably is not perfectly formed. It looks as though the incisor immediately adjacent would quickly pierce the gum. The mother complains of only slight pain in nipple during nursing, and there is no evidence of injury to the nipples by the tooth.

DISCUSSION.

Dr. J. MADISON TAYLOR said that he regretted he did not bring a specimen of quite a similar tooth extracted by him at the Children's Hospital. The child was brought to him because the mother was suffering from laceration of the nipple from the tooth. He thought it was needless for the child and doubtless damaged the mother, and he easily extracted it, after the manner of the Chinese, with the finger and thumb. The child had it at birth, or immediately thereafter, and it was one of the lower central incisors. He has seen two such cases.

Dr. FRANCIS R. PACKARD said that he had assisted Dr. MacCoy in a case which was of interest in this connection. It was that of a woman, 48 years of age, who had at birth a central upper incisor. This was extracted, and as a result a mass of callus formed in the jaw, and when a permanent tooth was developed it was deflected and Dr. MacCoy extracted it from the nostril, from which there had been, since childhood, a persistent, purulent discharge. This gave permanent relief to the nasal condition.

In regard to the frequency of occurrence of congenital teeth in the same family, Dr. Benton reported in the *Journal of the American Medical Association*, the case of his wife, who had two children, each born with teeth, and who herself had teeth at her birth.

Dr. ROSENTHAL had seen a number of such children. The teeth seem to wear down from constant sucking, to become rounded and remain for two or three years and then drop, just as the first teeth of childhood. I had never seen any trouble from them such as Dr. Taylor describes.

Dr. J. P. C. GRIFFITH called attention to Shakespeare's reference to Richard being born with teeth and that accounting for his savage nature.

Recovery from Tuberculosis Complicating Typhoid Fever.—Dr. TAYLOR presented a young girl, ten years of age, who had been treated in the children's ward of the Polyclinic Hospital for a thoroughly well-marked attack of typhoid fever, during the course of which acute tuberculosis of the lungs manifested itself, producing profound prostration and emaciation. The child was apparently well, having gained thirty pounds in weight. The pronounced lesions distinctly demonstrable in the right lung and lesser lesions in the left lung were now healed. At one time a bronchus was perforated and a large amount of fetid pus and fragments of lung tissue were expectorated. The temperature chart, which he exhibited, showed great fluctuations in temperature, which were controlled more or less by cool spongings. Digestion was well maintained, and this saved her life. The remarkable point was the intensity of both processes, and yet recovery followed.

Dr. J. M. O'MALLEY read a paper upon **Typhoid Fever in Children, with Report of a Family Epidemic**, and Dr. LEIDY read a paper with the following title:

Typhoid Fever in a Child of Three Years of Age with Persistent High Temperature.—Dr. JOSEPH LEIDY reported the following case: There were well-marked symptoms of typhoid fever, and from the beginning there was no difficulty in diagnosis. Temperature slowly rose and reached 103° at the end of the first week. For three weeks the temperature ranged between 103° and 104° , and at times rose as high as 105° and 106° . At the end of the fourth week the temperature slowly began to fall. At this time the case presented the appearance that a typhoid generally does at the beginning of convalescence. At the expiration of the fourth week the child had intestinal hemorrhage, extending over several days; it grew rapidly worse, the temperature falling, immediately to rise to 105° to 106° , and remained at this height until its termination, some two weeks later, in death.

The case is of interest as presenting the *persistent* high temperature, and the intestinal hemorrhage, which is, comparatively speaking, rare in children.

Dr. W. A. N. DORLAND had placed in his hands the chart showing the temperature range of a case of typhoid which came under his observation, which shows very markedly and beautifully the typical remittent course of temperature as it frequently occurs in childhood. The experience of writers as well as of observers upon the subject is that the temperature runs a modified course, usually remittent in character in young children and early puberty. This certainly had not been his own experience, nor has it been the experience of a number of men who have had a large experience, but have written very little upon this subject in connection with this disease. The temperature charts to which he has had access, some cases in the Pennsylvania Hospital, and several in the Children's Hospital, showed that the temperature, instead of being remittent in type, had pursued the course that it does in adults, except possibly somewhat modified. In this case you will see that it is one which presents rather the temperature which you would expect to find in a severe case of typhoid in an adult. The chart presented by Dr. Dorland presents the remittent type of typhoid. In the so-called abortive typhoids and those which show a marked remission reaching almost the normal point, if the blood had been carefully examined, and had there been as much known about the subject of malaria a few years ago as we know now, many of them would have turned out to be cases of malaria and not typhoid fever. We have all seen cases of so-called remittent typhoid fever in early life, but certainly great care should be exercised in diagnosing cases of this type; the course of fever during obscure cases of entero-colitis at times makes a diagnosis without the pathognomonic signs a question. In connection with such cases the term "innominate fevers" has been suggested, until we are all better able to make a positive diagnosis.

Fetal Typhoid and the Widal Reaction in the New-Born was the title of a paper by Dr. J. P. C. GRIFFITH. He reviewed some of the infectious diseases in which there was reason to believe that an attack might occur in utero. He referred to the greater difficulty in determining the possibility of this occurrence in typhoid fever, owing to the less characteristic symptoms which the disease exhibits. Still there are cases reported in which typhoid bacillus have undoubtedly been found in the fetal tissues, and he reviewed some of the

literature bearing upon this. Finally he referred to the few experiments which have been made with the Widal test in the blood of the fetus and new-born, and reported a case in which he had obtained a positive reaction in the blood of a child born from a typhoid mother.

Suppurative Osteomyelitis.—Dr. J. H. JOPSON reported a case of suppurative osteomyelitis of the tibia in a child aged two and one-half years in the service of Dr. H. R. Wharton, at the Children's Hospital. The entire diaphysis of the tibia was removed as a sequestrum in one piece. The patient suffered from continuous high fever from the time of admission, and finally died of septic pyemia.

Autopsy showed, besides areas of necrosis in the viscera and catarrhal pneumonia, what were apparently healing typhoidal ulcers in the intestine. The suppurative osteomyelitis was probably post-typhoidal, the result of a mixed infection. It has been shown in these cases that the Eberth bacillus alone may cause a form of osteomyelitis, usually circumscribed and terminating either in resolution, caseation, or liquefaction, in the latter cases with or without the production of small sequestra. It may also, by weakening the resistance of the medullary tissues, furnish a nidus for the implantation of the pyogenic cocci, especially the staphylococcus pyogenes aureus. The first form is usually chronic, with little tendency to spontaneous healing when a sinus forms, and to effect a cure a thorough removal of the diseased tissues is necessary. The latter form does not differ from ordinary suppurative osteomyelitis, and like it demands early and radical operative treatment.

Typhoid Fever in a Baby.—Dr. A. O. J. KELLY reported the case of a suckling, aged 25 months, admitted to the wards of Dr. Donellan at St Mary's Hospital. The mother had suckled the baby during the first two weeks of a course of typhoid, and died in the same hospital four days before the child's admission. When the baby came under Dr. Kelly's charge it was irritable, slept badly and had anorexia, coated tongue, fever, and diarrhea. The abdomen was distended, the spleen palpable, spots were present and there was gurgling. The urine was negative. The treatment was repeated, minute doses of calomel followed by milk diet. Cool spon-

ing when the temperature was above 102° (only four times), and small doses of salol and whisky. There were no complications, and the child was discharged well after three weeks.

The temperature and source of infection were of interest. As to the latter, Dr. Kelly had been unable to find reported examples of typhoid bacilli found in mother's milk (staphylococci have been repeatedly discovered), but thought this a not improbable source since they have been found so widely distributed in the organs after death and in the blood, sputum, urine, etc., during life. Cow's milk, contaminated water or bed clothing might, however, have been the source.

The temperature was markedly irregular, showing diurnal variations of as much as 4.5° , and sometimes showed the normal type, being lowest in the evening. It reached normal on the eighth day after admission, after rapid lysis, but showed slight variations for a week later.

DISCUSSION.

Dr. E. ROSENTHAL said that it had been his experience to see typhoid in children mostly after the age of two years. He could only record one case of an infant which had typhoid fever, and this case was left in his charge by Dr. Owen. The mother contracted typhoid herself, and the child's symptoms were very suggestive of the same disease. After weaning and placing upon a suitable diet and treatment, it made a thorough recovery. It was about three months old. No bacteriological tests were made, but the fact that the mother was ill with typhoid seems to strengthen this diagnosis.

The cases of typhoid fever that he has seen have pursued a different course from those presented to-night; they have often shown nervous symptoms to such an extent that the diagnosis could not be well established between meningitis and typhoid fever.

In two cases he had seen with consultants he had made the diagnosis of typhoid in opposition to theirs of meningitis. The diagnoses were never confirmed, but the fact that other members of the families sickened with typhoid about the same time lends support to his view.

At the present time he had a child two years and six months old ill six days with typhoid symptoms, and Dr. Pease of the Bacteriological Laboratory of the city has just

told him that the Widal's test was positive. A great deal of stress has been laid upon the mild character of the typhoid fever in children. This he believed to be erroneous, as dangerous cases are as frequent in children as in the adult. The chart Dr. Leidy presented shows the kind we meet with in our part of the city where the people are afraid to use water. Hemorrhage from the bowel he had never met with; but the nervous symptoms upon which he lay such particular stress he found to be the most prevailing symptoms among this class of people.

He was interested in hearing the mention of typhoid following scarlet fever. He had one case which went through a typical course of typhoid immediately after being discharged from the Municipal Hospital, where it had had scarlatina. He had also seen typhoid follow chicken-pox.

Dr. MUEHLECK said that he was glad Dr. O'Malley mentioned the peculiar behavior of the leucocytes in typhoid fever. This is a point which has been often overlooked, and yet it is one of great importance in our differential diagnosis. Since the investigations of Widal, von Limbeck and others, we know that in contradistinction to leucocytosis, which almost invariably takes place in most of the infectious diseases, there is not only an absence of increase, but an actual decrease of leucocytes in typhoid fever, so much so that this decrease is often to the extent of 1800 in the cubic millimeter. This is remarkable because it has been shown that the proteines of Eberth's bacillus are positively chemotactic, that is, they attract the leucocytes. He thought that Dr. Rosenthal's point might very quickly have been cleared up in that way. In meningitis simple we have a remarkable increase in leucocytes, while in typhoid fever we have a decrease.

Dr. J. M. BROWN read partial notes of a case of typhoid in a child of nine years which was complicated, in the third week, with pneumonia. The temperature ranged high and at times reached 106°, but energetic hydrotherapy brought about a good recovery.

Dr. MILLER said that it seemed to him, in view of the statistics of the New York Foundling Hospital, we ought to be very cautious in making this diagnosis of typhoid fever in infants. He had seen a great deal of typhoid fever in children but had never seen a case under three years of age. Unless

we can find the rose spots and have a more or less typical fever, he did not think we were justified in making this diagnosis in infants. Nor are we helped either at the post-mortem table; the fact of enlarged solitary follicles, enlarged Peyer's patches and enlarged spleen are not sufficient to establish diagnosis of typhoid fever post-mortem. He had abundant opportunity to verify this in making a number of autopsies at the Sheltering Arms, with which he was once connected. The similarity of the lesions of children dying from intestinal catarrhs with the lesions of typhoid fever is striking. We have the swelling of the solitary follicles, Peyer's patches and of the adjacent lymph glands. Dr. Arthur V. Meigs has pointed this out, and some years ago at the Pathological Society he presented specimens from the same institution showing this same point. We must exclude malaria plasmodium, and we must also bring to our aid the newer methods, particularly the Widal test, before we can establish a diagnosis of typhoid fever in infants, unless we have the rose spots.

Dr. JOSEPH LEIDY confined his remarks entirely to the temperature of the case which he reported, without going into the symptoms. The nervous symptoms of this case were classical. The aphasia in the fourth week was marked. There were two adults in the same family who had suffered from typhoid fever and had made excellent recoveries. There were no complications except those already noted.

D. L. EDSALL, M.D.,
Recorder.



ABSTRACTS.

SPASM OF THE GLOTTIS.

Loos (*Münch. med. Wochens.*, 1896, *xliii*, 1022) gave his personal observations in this disease. During five years he saw 164 cases. With few exceptions all these children presented, besides spasm of the glottis, symptoms of the tetany of adults, *i. e.*, facial phenomena, muscle and nerve irritability to mechanical contact, and Trousseau's sign. In the few cases in which an electrical examination could be made, the characteristic reaction of the muscles in tetany was elicited. The age of the patients was usually between two and three years, and the greater number of them were rhachitic. Many were affected with slight craniotabes, and occasionally the affection was complicated with other diseases. He does not, however, believe that rhachitis stands in any causal relation to spasm of the glottis and tetany of childhood. The spasm rather belongs to the symptomatology of the tetany of children. It is the symptom which calls attention to the presence of tetany, and is at the same time the most dangerous symptom. Among the 164 cases there were 14 deaths, some of them due to the laryngo-spastic attack and others to accidents.

In the discussion, R. Fishl said that he could not agree with Loos in regard to the relation between laryngeal spasm and tetany. In his experience he has met with numerous cases of laryngeal spasm in which symptoms of tetany were never present. A close connection between rhachitis, tetany and spasm of the glottis does not exist. Spasm of the glottis is most likely a partial convulsion, and tetany is a laryngo-spasm with internal convulsions, accompanying tetaniform symptoms. The general convulsions, etc., are only links in a chain of reflex-symptoms, which may be brought on by the most diverse influence.

Fishl was inclined to believe in toxic influences due to gastro-intestinal disturbances as the explanation of these conditions. He did not believe in the infectious nature of tetany.

The etiology of spasm of the glottis might be cleared up by examinations of the urine for toxic products.

ON CATALEPTIC PHENOMENA IN RHACHITIC CHILDREN.

A. EPSTEIN (*Ibid.*) observed cataleptiform arrest of motion in eight children, the youngest being 18 months old and the oldest three and a half years. This phenomenon was especially surprising on account of the age of the patients, in whom such persistence of position was unexpected. If a lower ex-

tremity was lifted, it remained for some time in this position, and only gradually descended. This lasted sometimes 15 to 20 minutes, and in one case 45 minutes. The extremity remained in any position it was placed. The phenomenon was induced in the lower extremities easier than in the upper ones.

It was not a tonic spasm, but a lowered reflex irritability to sensory irritation. All the children showed signs of rickets, and none were able to stand. This phenomenon might, therefore, belong to that group of nervous disorders which appears so often in rhachitic children (spasm of the glottis, tetany, an inclination to convulsions, etc.), and which is looked upon by some as a direct result of rhachitis of the skull.

Beside the rhachitis and great general debility, all of these children presented marked mental retardation and physical depression. They were either not able to talk, or had a very small vocabulary. They were generally quiet, uninterested, without will power, and lazy. The usual causes of the cataleptic condition, as hysteria, hypnotism, suggestive influences, or simulation and imitation, could be excluded in these children on account of their age. The general debility, the mental dulness, and the history of previous acute diseases (pneumonia), reminded one of the cataleptiform conditions sometimes found in adults after a grave disease, *e. g.*, typhoid fever (Bernheim). Undoubtedly we had in these cases to do with a disturbance of the psycho-motor function.

ON POISONING BY MILK.

SONNENBERGER (*Ibid.*) said that the diseases produced by the ingestion of the milk of animals, particularly in infants, are based either on infection or intoxication, the first being caused by bacteria, the latter by chemical poisons. While the first forms have been carefully studied for some time, the chemical poisons have been somewhat neglected, although they possess great importance as disease breeders. The latter statement is denied by Escherich, Soxhlet and others. The manner of origin of the milk and the double function of the milk glands, as excretory as well as secretory organs for all kinds of poisons (Frohner, Menzel), make it seem possible that chemical poisons can be secreted with the milk. It is of great importance to confirm this transmission, if we take into consideration the vegetable alkaloids contained in the fodder. All the diseases of the digestive apparatus in the infant, from simple dyspepsia to the so-called cholera, are due to the presence of chemical poisons in the milk, whether primary or secondary to bacteria.

On this conception a rational therapy can be constructed. The prophylaxis of these diseases may be summed up in

Heubner's words as the prevention of the contamination of milk with either the poison itself or the producer of poison. Hence sterilization of the milk is not sufficient. Equally important is the prevention of the presence of chemical poisons in the milk, because these poisons are uninfluenced by sterilization.

ON WHOOPING-COUGH.

JUL. RITTER (*Ibid.*) said that of 1161 cases of whooping-cough, he was able to demonstrate the diplococcus tussis convulsivæ, described by him, in 147 cases, *i. e.*, in all those cases where specimens of the expectoration could be obtained. He had studied the causes of the presence and activity of the diplococcus and gave a résumé of the characteristic qualities of the specific germ. For the treatment of this disease bromoform was recommended, based on a table of comparison between the action of this drug and quinine. The use of energetic doses of a reliable preparation and its long continuation was necessary for success. Bad effects were never seen. Experiments on animals showed its mode of action and its harmlessness. In the discussion, Sonnenberger remarked that Unger's experiments prove that bromoform was not harmless. Although the success of quinine cannot be denied, particularly in the whooping-cough of adults, Binz himself points out that it would be well to seek other remedies which would accomplish similar results, but were devoid of bad taste. He had personally seen good results from antipyrin in whooping-cough. The antipyrin intoxications occasionally observed ought not to restrain us from using the remedy.

Schlossman called attention to the fact that Ritter's cultures had an extraordinary similarity to gonococci cultures. They differed from the latter by growing in agar. Heubner recently described the intracellular meningo-coccus, which grows in agar and which also possesses the greatest likeness to Ritter's diplococcus tussis convulsivæ. As the latter can be cultivated on agar, the question arises, whether these two forms are identical or only closely related.

Neumann said that he was able to demonstrate the diplococcus of Ritter in only 1 out of 18 cases. He had used all the recommended remedies for whooping-cough and found that none could be called a specific.

SUDDEN DEATH OF AN INFANT FROM HYPERTHERMIA.

THOMAS (*Ibid.*) reported the *sudden* death of a healthy child, barely four months old, from hyperthermia. Within a few hours a temperature of 42.2° C. was found in the rectum of a seemingly healthy child, and shortly after, it died. No symptoms of disease were found up to its death, notably none

which affected the internal organs. The child was brought to the hospital for a slight seborrhea of the head, which had nearly healed. No internal medication had been given the child, and it had taken two hours before death its usual allowance of milk without vomiting. No convulsions were observed by the nurse before death. Nothing abnormal was found at the autopsy, except the spleen and intestinal follicles were swollen and the thymus gland was enlarged. The child was at no time exposed to any infectious disease, and the death seemed wholly unaccountable. He thought the case proved that a fever, due to some unimportant functional disturbance, might produce death from hyperpyrexia.

INHALATION OF OXYGEN GAS IN THE CATARRHAL PNEUMONIA OF CHILDREN.

OPPENHEIMER (*Ibid.*) resorted to inhalations of oxygen gas in 15 severe cases of catarrhal pneumonia. After each inhalation the pulse and aspect of the patient were materially improved. In one case, which was minutely described, cyanosis was totally removed, for the time being at least; somnolence gave place to a fully awakened, bright condition. The author recommended the gas as a powerful excitant of the heart's action, and concluded that although oxygen had not the power to cure every case of pneumonia, or even shorten its duration, it was useful in stimulating the heart's action to a high degree, and should be employed whenever musk and camphor fails.

THYROID TREATMENT IN RETARDED BODILY GROWTH.

JUL. SCHMIDT (*Ibid.*, p. 1028), in continuation of a previous report, referred to the connection between dwarfism (fetal rhachitis) and cretinism, mentioned by Virchow in 1883. The cases discussed were healthy children, bodily and mentally (without myxedema), who had remained behind in size and bodily development after having developed for a time in a normal manner. The author believed that the cause of retardation was a greater or lesser atrophy of the thyroid gland. As a proof he mentioned Dolega's case of a primary arrest of bony growth, in which the thyroid gland was found to have disappeared, with the exception of a few small portions of the lateral lobes. In the living subject the nearly total disappearance of the thyroid gland was discovered, through a tracheotomy performed on a five-year-old dwarfed patient of Deutch. Lenz refers the marked retardation of growth in a 16-year-old patient (without myxedema) to an athyreosis, *i. e.*, "the thyroid gland could only be felt as a rudimentary lobule." Furthermore, there have been published by Kocher, Bruns and others, after total strumectomies, cases of sudden cessation of growth, and Hofmeister, Eiselsberg and Moussu report

inhibition of growth in animals after thyroidectomies. Lanz went further still and produced a continuance of growth by feeding animals with thyroid gland. The physiological effect of the thyroid gland on the growth of bone has been explained by the experiments of Roos on dogs. He proved that in the absence of a thyroid gland, an insufficient amount of phosphoric acid was assimilated by the body. The effect of thyroid substance on dwarf-growth with myxedema is well known, and it was natural to try this treatment in simple dwarfing of the body. The author had control of four cases in which he obtained rapid growth (up to 12 cm. in a year), and great increase in weight. The thyroid gland could not be palpated in any of these cases. He laid some stress on the importance of utilizing the youth of the subject in the administration of thyroid preparations, and particularly of the physiological energy of growth. Under all circumstances the administration of thyroid should be tried in older persons if we do not find ossified, by means of the Roentgen rays, the lines of the epiphysis of the long bones, and particularly the lower epiphysis of the femur, where the greatest growth in length takes place. Unfavorable cases for thyroid feeding, besides the rachitic dwarf-growth with its early ossification of the disks of the epiphysis, are those cases in which the retardation of growth is due to a weak hereditary disposition, constitutional anomalies and brain diseases (hydrocephalus). But even in these cases the thyroid treatment should not be omitted, as the experiments of Lanz showed an increase of growth in healthy young animals by the administration of moderate doses. The author used Engelhardt's thyroïdin tablets or the English preparation, and continued it for a long time (one year and over) and in small doses. The daily dose was 0.05 grm. up to the 4th year, 0.1 grm. from 4 to 7 years, 0.15 grm. from 7 to 14 years, and 0.3 grm. from 14 years up. The tablets are to be taken for four weeks, then discontinued a week, and so on. In this manner, and under control of the physician, the treatment was absolutely harmless. No symptoms of thyreoidismus, nor other disturbances (jactitations or albuminuria) were observed in spite of the long-continued treatment.

THE HYPOPLASIA OF THE TOOTH ENAMEL AND ITS RELATION TO DISEASES IN CHILDHOOD; AND ESPECIALLY OF THE SO-CALLED HUTCHINSON'S TEETH TO SYPHILIS.

BERTEN (*Ibid.*, page 1027) recognized that the affection of the child's tooth, which is usually termed "erosion," was an anomaly in cases of retardation of the development of the tooth, which is based upon a disturbance of the process of calcification. According to the dimensions of this disturbance, it

represents to the eye a simple line or a great defect in the tooth (Hutchinson's tooth). All these defects are based upon one and the same anatomical cause. It is true that the author has theoretically explained the changes and disturbances in the normal development of the tooth; the microscopical proof is still lacking. As the so-called Hutchinson's tooth is always due to a certain disturbance of nutrition, it should not be considered a special syphilitic sign, although frequently present in syphilis.

THE RELATION OF THE DISEASES OF CHILDREN TO THE DISEASES OF THE TEETH.

NEUMANN (*Ibid.*, page 1027) said that we must distinguish: First, the diseases occurring before the eruption of the teeth, and second, those occurring after eruption. He gave a table of the development of the teeth, which was based on the length of the tooth taken from the jaws of 111 children, and on the measurements found in literature. It was necessary to determine the maximum and minimum length a tooth may have at a certain age. Only in this way could the erroneous suppositions in regard to the causes of congenital abnormalities be corrected. Great emphasis should be laid on a sharp division between so-called erosions and hereditary syphilitic anomalies. The first, which have been particularly well described by the French, are unusually frequent, and appear in the form of punctated and linelike depressions of the surface. They are always arranged symmetrically on the teeth, and at various heights on different kinds of teeth. Of the milk teeth, the canines and molars, of the permanent teeth, the first large bicuspid—the incisors and canines—are affected. Fifty-four per cent. of the erosions run their course in the first year of life; thirty-eight per cent. are found in the second year, and six per cent. in later years. The process is more or less continuous, and cannot, therefore, be attributed to convulsive seizures, as Magitot teaches. That the erosions are not exclusively due to syphilis, is generally conceded at the present time. Hutchinson is the only one who makes a sharp distinction between “erosions,” and hereditary syphilitic teeth. In forty-eight “erosions” in the dead body, only one case had syphilis, and in 117 clinical cases, only five were due to syphilis.

Premature births did not occur more frequently in families where “erosions” were present than in other families. In the dead subject “erosions” were found in forty-three per cent., in sick children brought to the polyclinic in eighteen per cent., and in other children in fourteen per cent. Microscopically, calcification of the substance of the tooth and the enamel was found. Clinically and anatomically the connection with rhachitis was highly probable, and especially did it depend on

rhachitis of the jaw-bones. The influence of other diseases was probably only in causing or increasing a rhachitis. The hereditary syphilitic anomalies of the teeth of Hutchinson are undoubtedly to be differentiated from rhachitic erosions.

Without discussing the shape of the teeth more minutely, stress may be laid on the fact that we have to do with a veritable malformation of the whole tooth in these cases, which, under certain circumstances, confines itself mainly to the free edge of the tooth, and occasionally is hardly recognizable. On the other hand, combinations of rhachitic and syphilitic changes in the teeth frequently occur. There are two forms of caries, occurring after the eruption of the teeth, which should be particularly noticed. One begins at the free edge of the middle-lower incisor and all the upper incisors of the milk teeth, and distributes itself in the form of a half-moon over the whole tooth. In thirty-two cases, syphilis was diagnosed four times, one patient suffered with hereditary heart disease, and five with chronic disease of the central nervous system. The connection with syphilis, though not proved in each case, was probable. Another form of caries begins with a discoloration of the enamel, preferably on the upper teeth, particularly of the incisors near the gum, and separates a portion of the hitherto healthy tooth by a circular caries from the rest. In the dead house, of the cases in which this type was present, fifty-six per cent. were tuberculous cases, but the other cases in which this was absent, only thirteen per cent. were tuberculous. Of the clinical cases, nearly two-thirds were tuberculous or scrofulous. The children with circular caries, even those in whom no tuberculosis could be discovered, had marked tuberculous family history. The disease can, of course, be traced to local conditions of the mouth, but it is just as certain that among the chronic disturbances of nutrition, which affect the teeth, tuberculosis is the most frequent. Under certain conditions this disease, as well as that beginning on the free surface of the teeth as circular caries, has an important confirmatory weight in the diagnosis between syphilis and tuberculosis. The rhachitic erosions permit of a retrospective diagnosis, reaching back to the infantile period. In the permanent teeth there is frequently found a firmly seated green deposit near the gum, which stands in indirect connection with scrofulosis. In no case can the absence of cleanliness or the use of a nipple be considered the true cause of this deposit or the above described form of caries.

DIVERTICULUM OF THE STOMACH.

FLEINER (*Munch. med. Wochenschr.*, 1896, *xliii*, 990) reported the following remarkable case: A child eight years old, weakly and delicate from birth, was frequently affected,

after or during eating, with dyspnea, pressure and pain in the region of the stomach, strangulation and rumination. Sometimes mucus and water were vomited, a peculiar cough was present at night, and a noise as though water was being agitated within the chest was heard. The child always chewed very slowly and ate little. The most various diagnoses had been made by different physicians. The child became emaciated. The author treated the case by systematic irrigation of the stomach, combined with feeding through a stomach tube. The patient could satisfy her appetite after this, and gained five pounds in ten days. A nervous affection of the stomach seemed excluded, as the child allowed the passing of the tube without objection. When treatment was discontinued, the symptoms returned again, and lately the patient again came under his care. On withdrawing the tube a quantity of fluid came out with it, and it was determined by the sound, that a cavity existed above the stomach, which had a capacity of seven ccm. By washing out this portion, the suffering was alleviated, but it seems likely that it will have to be fed by the stomach tube during the remainder of its lifetime. The malady is congenital.

In the discussion, Boas said that he had observed two similar cases. In one, the patient was able to help himself very well by filling the stomach tube to its top with air or food, then by making strong pressure, he caused the whole contents to pass into the stomach at once. Therapeutically considered, a continued feeding by the stomach tube or *per rectum* seems indicated to produce a gradual contraction of the diverticulum.

Ewald called attention to the fact that in autopsies the presence of a double stomach can frequently be verified, if we pour liquefied wax into the stomach, through the stomach tube, without any signs of stricture or old cicatrix being visible.

Kelling reported a similar case, in which, however, no obstruction could be found in the esophagus, and, therefore, a central cause must have been present.



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ORIGINAL ARTICLES.

THE DIAGNOSIS OF TRAUMATIC SEPARATION OF THE EPIPHYSES.*

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ALTHOUGH the main features of the subject of this paper are well known to all, there are several points of great practical importance in connection with it, the proper consideration of which can alone lead to a correct diagnosis.

Detachments of the epiphyses or parts of the epiphyses are of daily occurrence, yet, compared with fractures in children, how small in number are the cases on record where an accurate diagnosis has been made and how few of our standard text books and works on surgery give us at all an adequate account of this most important, interesting, and difficult class of injury.

It is the diagnosis alone which can make us cautious, as much in the treatment of these cases as in the matter of prognosis. These injuries being so liable to be followed by deformity, suppuration, stiffness of a neighboring joint, and by imperfect or irregular development of the limb, we should at once warn the parents of the serious nature of the injury. A professional reputation might be easily destroyed did we not fully explain the nature of the case, the deformity and im-

* Being an unpublished paper read before the West Kent Medico-Chirurgical Society, April, 1886.

paired usefulness that may ensue in the limb in a few years, and point out all that may occur in spite of the most careful and skilful treatment of the case.

Simple separation of an epiphysis from the shaft, with more or less displacement, may be tolerably easy of recognition by the ordinary rules of surgery, but it is the complicated cases and cases of detachment of part only of the epiphysis, with fracture of the diaphysis, that may mislead and throw us off our guard. The latter may also be combined, though rarely with dislocation of the epiphysis.

To make the subject as clear as possible I shall remark upon the chief points in the diagnosis of epiphysial injuries collectively, at the same time describing several of the more common separations, giving examples.

Let us take six points, placed in the order of their importance, or more correctly their trustworthiness.

1. Age of the patient.
2. Mobility corresponding to an epiphysis.
3. Displacement at an epiphysial line.
4. Modified crepitus.
5. Character of displaced diaphysis or epiphysis.
6. Joint frequently intact.

1. *As to Age.*—These injuries can only occur, as a rule, in patients below 21 or 23 years of age, before the epiphyses have become united by bone to the shaft. A few instances have been recorded beyond this age, but I am inclined to put down these exceptional cases, like those occurring in young infants, as the result of some diseased or at any rate altered condition of the bone.

Contrary to the generally accepted views, I believe traumatic separation of the epiphyses, especially those of a simple character, to be comparatively rare in young children, and this I shall presently explain. When we come to closely examine into this question of age it will be found that the epiphyses of certain bones are liable to be broken off at particular periods.

I was greatly struck with this fact when examining the specimens of epiphysial separation in the museums of London and elsewhere. Taking for example the lower epiphyses of the femur, which according to museum specimens is more frequently affected than any other—out of fourteen specimens,

eleven ranged from fourteen to eighteen years of age. With regard to the lower end of the radius, which came next in order of frequency, I found the age to be somewhat under this—from twelve to sixteen years in seven specimens. This pathological fact, if I may so call it, is further borne out by the statistics of simple separations that have hitherto been published. M. Delens, in the *Archives Générales de Médecine*, has also noted this fact in a collection of twenty-seven cases of the lower end of the femur; the period he gives for this epiphysial separation is from ten to eighteen years of age. This does not appear to be so accurate as the period just given, since he has collected every case he could find published, whether simple or pathological; many of the former cannot be relied on, being evidently due to disease in the bones, and occurring in infants, thereby making the average period too low. This peculiarity of each bone can, I think, be explained on anatomical grounds. There is a certain time in each when the opposed ends of the epiphysis and diaphysis are converted into tolerably firm bone, with a thin wavy lamella or disc of cartilage intervening. Now, at this period the separation usually occurs directly through or close to the epiphysial line of junction, more or less in a transverse direction, so that we get a true simple separation. Before and after this time, the anatomical conditions of the ends of the bones are altered, ossification being either too far or not far enough advanced, *i. e.*, the epiphysis is in part united to the shaft or itself not perfectly ossified, but composed of yielding and elastic cartilage; hence we discover *not* a simple but often a very complicated fracture through the epiphysis or diaphysis.

I have come to the same conclusion after many experiments on the dead body.

Rickets, scurvy, syphilis, epiphysitis, tuberculous disease and other affections may so hasten or retard the process of union of the epiphysis with the shaft as to alter entirely the most frequent period at which the separation of that particular bone takes place in a healthy subject. This aspect of our subject under consideration, although exceedingly interesting, is too large a one for me to further enter into here.

2. *Mobility of an Epiphysis.*—After the question of age, this sign is the most important. If we find mobility in or near to the epiphysis in a young subject below twenty-one years

of age, the history of whose injury we have informed ourselves of, we have sufficient evidence without any other to suggest at once to our minds the occurrence of an epiphysial separation. If with these two signs we discover any of the others to be mentioned subsequently, the diagnosis of the lesion should be made with great accuracy.

Locking of the diaphysis into the hollow of the epiphysis may, in a few cases, effectually prevent any mobility being detected.

3. *Displacement at an Epiphysial Line of Junction.*—It is quite impossible to make an accurate diagnosis if we do not have a clear conception of the precise anatomical features of each epiphysis, the direction of each epiphysial line of cartilage, and its distance from the joint or interarticular line. Sir Astley Cooper, in his *Fractures and Dislocations*, does not directly allude to these injuries, and it is remarkable that so eminent a surgeon should have omitted a subject so important. This is what Sir Charles Bell says in his work on *Injuries to the Thigh-Bone* (1824), p. 41: "The advantage of taking anatomy as the ground-work of our observation is that nothing is forgotten. Had this method been followed by Sir Astley Cooper, writing professedly on the fracture and dislocation of the thigh-bone, he could not have neglected the subject of diastasis altogether—a fact so important both in the question of fracture and dislocation."

I may incidentally notice that the upper epiphysis of the humerus includes the tuberosities, the lower end of the femur, all the portion below the adductor tubercle, while the lower epiphysis of the humerus (after puberty) does not include the epicondyles, but only the external one with the trochlear and capitellar processes. It is unnecessary for me here to enter into the numerous and important features of each epiphysis. In a large proportion of instances the epiphysis is displaced more or less from the diaphysis, and in not a few it is complete. Examples are recorded in which the ends of the humerus, femur or radius were completely displaced and pressed upon important vessels and nerves.

Mr. Bryant mentions a case of displacement of the lower extremity of the humerus where the anterior border of the diaphysial end so injured the brachial artery as to occlude it, recovery, however, taking place. In other cases noted the

axillary or popliteal vessels were lacerated or pressed upon. The end of the diaphysis is usually smooth and flattened, and unlike the pointed end in a fracture. In complete displacements the periosteum is stripped off the shaft for many inches, and suppuration with necrosis of the shaft may ensue, more especially in compound separations; its connection with the epiphysis remains intact, being intimately connected with it. This stripping up of the periosteum will be found to occur to a greater or less extent, together with penetration of its sheath by the diaphysial, and this even when the displacement is not quite complete. These are points of the greatest practical significance. Without this knowledge I believe it impossible to make a correct diagnosis, at any rate in partial displacements, if only a few days have been allowed to elapse from the time of injury to that of making the examination. By this time the torn-off periosteum has inflamed and thrown out new osteoblastic material around, which fills up the angles and depressions between the displaced epiphysis and diaphysis, rendering their otherwise sharp outline obscure, besides diminishing the mobility in this situation, should this sign be then sought for. The inflammation of the periosteum, together with the oedematous condition of the soft parts in the neighborhood, will consequently defy an accurate investigation of the lesion, and no subsequent examination of the seat of lesion—that is after the surrounding oedema, etc., has subsided—will throw much light upon it, for the new bone will by that time have become more solid and unyielding.

It is well known how soon new osseous material is produced by the injured periosteum in children, a few days being quite long enough for a thick spongy layer to form. Even when the periosteum has not been torn off, spongy bone will be formed, simply as a result of the violence to it or in its neighborhood. I have seen it about the bones of the elbow-joint after a simple dislocation in a child. So shall we also find it when there has been no displacement of the epiphysis or diaphysis, but only a simple detachment of the epiphysis, without any displacement. However, as I have said, we usually find in this case some slight tearing up of the periosteum.

This brings me to another important practical point.

If separation of the epiphyses without displacement be

not well recognized, we shall probably overlook a considerable number of epiphysial injuries, as has been the case in by-gone days. I have already stated that, given the history of injury in a young patient below twenty-one years of age and, if on examination we find some mobility without deformity, *i. e.*, without displacement—corresponding to an epiphysis, an epiphysial separation should be thought of, or even diagnosed; otherwise, disastrous consequences may follow, particularly if the patient be allowed to move about with the lesion undetected, and for several reasons. The chief of these are: First, the ends of the bones may become gradually displaced and cause permanent deformity; or, secondly, cause pressure upon important structures.

Sir Charles Bell, in his "Injuries of the Thigh Bone," has recorded an instance in which there was a separation of the lower end of the femur. The accident occurred to a lad early in life. The boy, when getting on the back of a carriage, got his leg entangled in the spokes of the wheel, the force of which twisted off the epiphysis from the extremity of the diaphysis. About twenty years after, the patient, in jumping down from a chair, felt something snap and very soon after a pulsating tumor appeared, which was discovered to be a popliteal aneurism. The leg was finally amputated. This interesting specimen is now in the Museum of the Royal College of Surgeons of Edinburgh.

A somewhat similar specimen is in the Museum of the Royal College of Surgeons of England, from the practice of Robert Liston, and figured in his "Elements of Surgery." A girl sustained an injury to the knee when fourteen years of age, in consequence of the limb having been entangled in the spokes of a carriage wheel in motion; the knee continued painful and swollen, and she had a halt in walking. After the lapse of about three years extensive suppuration occurred in the lower part of the thigh and round the knee joint, and amputation very soon became imperative for the preservation of life. The synovial apparatus was found to be much diseased and the epiphysis of the lower end of the femur displaced forwards and upwards, so that only its posterior part rested on the tibia. In fact it was rotated almost half round on its shaft, and firm union by bone had taken place.

With our present knowledge of epiphysial injuries such results could hardly occur.

In the case last related, rotation of the epiphysis had evidently taken place after the accident, when the child had walked, but separation would assuredly have been diagnosed before the displacement had taken place, from the age of the patient together with mobility in the situation of the epiphysial line.

My investigations have satisfied me that most cases of arrest of growth of the long bones have been, in consequence of the injury not being diagnosed as an epiphysial separation, at the time of its occurrence.

Juxta-epiphysial sprains recently described by Ollier in their more severe forms are in reality partial separations of the epiphyses without displacement in infancy.

Fourthly, as to the *Modified Crepitus* met with in separations of the epiphyses.

If the separation be a simple one, that is to say a simple tearing of the conjugal cartilage from its shaft, with but few minute bony spicules remaining adherent to the epiphysis, then we shall find that the detached surfaces can be made to glide laterally or otherwise, over one another with a kind of "mortary" sensation. On the other hand, if large fragments of the diaphysis are broken off the diaphysis, as is frequently the case, the crepitus is of a more grating character, but still very different from the sharp, dry crepitus of an ordinary fracture.

When no displacement has taken place we must not expect to find crepitus, indeed, we should always make our diagnosis irrespective of it. We must not endeavor to obtain it in our examination, for, by so doing we do more harm than good by stripping up the peristeum still further. If, however, during our manipulation of the injured joint, we experience this sensation of crepitus, it is pathognomonic.

5. *Character of Displaced Diaphysis or Epiphysis.*—

When the end of the shaft may be seen projecting from the wound, and easily recognized by the flat surface, with its small elevations and depressions, I may at once dismiss the subject of compound separation, although in more than one compound case the diaphysial end has been mistaken for the articular extremity. In the injuries under consideration, whether the displacement be complete or not, we may usually

feel the angular margin of the diaphysis, very unlike the irregular, sharp projection of an ordinary fracture. If the displacement be complete, the finger of the surgeon may be placed in the more or less flattened "table like" end of the shaft. If many hours have elapsed since the time of the accident this sign will necessarily be greatly obscured. I am supposing now that separation has taken place through the whole extent of the conjugal line, and that it has occurred during the method mentioned above. This sign is common enough at the upper and lower ends of the humerus, but less so at the lower end of femur and radius. With regard to the last (separation of the lower epiphysis of the radius) I might add here that there is no such injury as Colles's fracture in children—*nearly* all are in reality separated epiphyses.

Now, unfortunately, a large proportion of the examples we see in practice do not present themselves as a complete separation; they are only *partial*, that is to say, the separation passes only through part of the epiphysial junction, and are often very complicated, being associated with fracture of the shaft or epiphysis or with dislocation of the neighboring joint. If to this be added the fact that separations may occur at any age from birth up to 20 or 23 years, and that the epiphysial fragment may be twisted or rotated on one of its axes, the enormous difficulties that frequently present themselves to us in practice are at once apparent. They will often tax the most skilled anatomist and surgeon to give a detailed description of the conditions presented. If an accurate anatomical knowledge be essential to the diagnosis of pure separations, how much more so must it be in these complicated and more common cases.

The following examples of partial separation of the epiphysis were under treatment by me in 1886. In the first a boy aged 6 years had been run over by a baker's cart, and the fracture had evidently traversed the inner half of the epiphysial line, and thence obliquely upwards through the lower third of the shaft. The inner part of the lower end of the diaphysis could be felt resting forwards. There was no fracture of the epiphysis, and the joint was intact. The elbow was put up in a "Crofts" splint, and the patient made a good recovery, with an excellent limb.

The second is the case of a girl aged $6\frac{1}{2}$ years. The sepa-

ration was through the outer part of the epiphysial line, then upwards and inwards through the diaphysis, the end of the outer part of the latter being felt in its displaced position forwards and outwards. The joint was normal. Not having seen the patient until more than two weeks after the accident, when I was called in consultation, a considerable amount of union had already resulted in this bad position. The movements of the elbow joint being unaffected, I recommended that the limb should be left in its condition, believing that it would be a very useful one, that the existing deformity would be moulded down by nature, but that irregular growth of the arm might (though very improbably) ensue.*

A good example of partial separation, complicated with dislocation, is to be seen in a specimen in Guy's Hospital Mu-



Author's dissection (in 1883) of the specimen of separation of the carpal epiphysis of the radius in the Museum of Guy's Hospital (No. 1117⁴²). The opposite half of the specimen is in the Museum of the Royal College of Surgeons of England (No. 956^B). Drawn by Dr. C. W. Hogarth.

seum. It was taken from a boy aged 10 years, whose elbow joint was excised by Mr. Bryant six weeks after the accident, on account of complete uselessness of the joint. On dissection I found separation and external rotation of the outer half of the epiphysis, associated with dislocation inwards of both bones of the forearm. Dr. T. H. Packard, of Philadelphia, in "Ashhurst's Encyclopedia of Surgery," mentions two

* No arrest of growth occurred, and the functions of the elbow were scarcely at all interfered with, although some slight deformity remained many years afterward.—J. P., 1897.

cases of separation of the lower epiphysis of the humerus entirely within the joint, and no perceptible deformity, and Mr. Hutchinson has recorded a few partial separations with complications. Our present knowledge of these complicated cases is most scanty, and will remain so unless more accurate observations and records are the rule and not the exception.†

In some of the long bones these partial separations are the rule and pure separations the exception, *e. g.*, at the lower end of the humerus; in others the converse rule will apply. At the lower end of the radius the detachment is most often exactly through the epiphysial line.

Doubtless, as Mr. Holmes states in his "Surgical Diseases of Children," many of the specimens of separated epiphyses in the museums present a few lamella or granules of the diaphysis still adhering to the epiphysis; yet I am of opinion, with many others, that these fragments are not of sufficient size to warrant the surgeon placing the injuries under the head of partial separations, nor to distinguish them, clinically, from complete or pure separations.

6. *The Joint is Often Uninjured.*—The epiphysis usually retains all its normal relations to the other bones forming the joint. This is true as regards the pure, as well as the partial, separation; as instances of these I may refer to the lower ends of the radius and humerus, examples of which I have quoted above. The prognosis is far better than if these were complicated, as so rarely occurs, by a fracture into the joint, but most often seen at the lower end of the femur.

In conclusion let me put together some of these salient points in an early diagnosis. A child is brought to us who has met with an injury near a joint—it may be a severe one, the patient may have been run over by a cart, or, on the other hand, have merely twisted its limb. On examining the limb we find some mobility about its joint. A separated epiphysis at once occurs to our mind. Dislocation in children, being so rare, is to be at once discarded. If the child be of a certain age, say 15 years, and it is the lower end of the radius that is involved, it will be of the complete variety, and if there be

† The recent skiagraphic process, 1896, will in the near future probably furnish some accurate data for the elucidation of all epiphysial lesions, but more especially at the elbow joint.—J P., 1897.

displacement we shall feel the flattened end of the shaft. If any time have elapsed from the time of the accident, and swelling obscures the neighborhood of the injury, the patient should at once be placed under an anesthetic, for in all these injuries an accurate diagnosis ought to be made at once.

If the case has been neglected, the soft structures around will have become swollen and the stripped up periosteum will have passed out porous bone, which I have already stated obscures the angular displaced ends. If many days supervene before a careful examination is made, the case will defy the most skilful surgeon.

Now, supposing we have a case where there is mobility (without any displacement to guide us), what will be the result if the nature of the injury be overlooked? The child is allowed to move about, and gradual displacement of the epiphysis or suppuration may result, with its consequences, as shown in many examples in our museums. Acute periostitis and necrosis are common results of the latter.

Sir Charles Bell records an example of this in a lad about thirteen years old, who had fallen through an open floor between the joists so as to twist the leg, and the effect was supposed to be a fracture near the knee joint. Suppuration took place in the joint, and by the delirious restlessness of the patient, and ulceration of the integuments, the bone was thrust through. It was then found that it was not a fracture, but that the spongy end of the diaphysis projected, whilst the epiphysis retained its connection with the joint. The specimen is in the museum of the Royal College of Surgeons of Edinburgh.

I believe that separation without displacement, often partial in character, is a frequent cause of acute disease of the hip joint.

Then again the epiphysis may become gradually displaced and produce permanent deformity or pressure upon important structures, so that an aneurism may develop. In later years arrest of growth may result.

Again, if the accident happened to a child either above or below the period of age in which pure separation usually occurs, all forms of partial separation and complications are likely to be met with, and present, as I have already said, the most frequent and difficult class of injuries. While attention

is being directed to the fracture or dislocation, the separation through part of the epiphysial line may be overlooked. Subsequent irregular growth of the end of the diaphysis may result from the partial separation and bring discredit on the surgeon. In this way genu valgum or varum may arise in the lower extremity. An anesthetic should therefore be administered and an exact diagnosis made at once.

One word as to treatment. It is a most consoling point that epiphysial separations readily unite, indeed much more readily than fractures. There is no specimen in the Pathological Museums in London, and I know of no instance of a permanently ununited epiphysial end of a large bone which has been separated by violence. Each case must be treated on its own merits, the displaced ends immediately and accurately reduced, and the ordinary rules of treatment of fractures followed. "Crofts" splints of plaster of paris are excellent forms, since they can be so easily reapplied.

Difficulty of reduction is not uncommonly due to the transfixing of the periostial sheath by the end of the diaphysis, which is tightly held in a "button-hole" manner, or tags of periosteum may be folded over between the fragments. Under these circumstances, especially at the lower end of the femur and upper end of the humerus, operative measures are absolutely necessary for perfect coaptation and retention of the natural functions of the limb.

Above everything in partial separations let us give a warning prognosis and inform the parents at once of the deformity that may in all probability ensue in after years. Great credit for our diagnosis may in this way be obtained.

HOME CARE AND TREATMENT OF EPILEPTICS.

By A. L. WARNER, M.D.,

Kankakee, Ill.

THERE are many reasons why this disease is one of the most obstinate and troublesome which the general practitioner is called upon to treat; and indeed, many of them would prefer not to treat epileptics, but have them cared for by specialists. Few are willing, or have the time, to give these cases the thorough study and examination that are required to find the often obscure etiology, and to treat the

neurosis rather than the symptoms of the case. Thus, they often place the patient upon "bromide" or some other routine treatment, without due investigation of the cause, with the hope of obtaining a palliative effect, if not a cure.

The percentage of complete recoveries from epilepsy is small, owing to the obscure nature of the disease and to the fact that only in a small number of cases does treatment seem to have more than a palliative action. There is also great difficulty in inducing patients to take the long and systematic medication required and to live in accordance with the rules laid down by the physician. If treatment is not given early and a cure effected, the epileptic habit which is established, in itself becomes a grave and difficult complication. Probably many cases of epilepsy could be prevented by proper systematic treatment, and it is a reflection upon the medical fraternity that steps have not been taken to more thoroughly impress upon the family physician his duty in this direction, as he in his practice frequently comes in contact with children predisposed by heredity to neurotic instability, who are prone to have infantile convulsions and other motor disturbances, with an abnormal sensibility to peripheral irritation. This renders them liable to become epileptics later in life, and should warn him of the necessity of watchful care over the future life of the individual.

Such a child will require careful examination and removal of all sources of irritation, and special attention should be given toward improving the general nerve-tone, and the living of a quiet and regular life. The diet should be plain and nutritious, with a limited amount of meat, and overeating should be carefully avoided. The bowels must be kept regular at all times. Hygienic surroundings and moderate exercise in the open air are highly important, and sound, refreshing sleep for at least ten or twelve hours in the twenty-four, is one of the greatest necessities. Children of this class are apt to have no self-control, and often an overbearing and irritable disposition, which must be met by quiet, kind and firm discipline. With the growth of the child, special effort should be made in the way of improving self-control, and cultivating a calm, stable disposition and the prevention of abnormal habits of life. Mental over-strain and study must be carefully avoided. The use of tea, coffee, tobacco and alcoholic beverages

ages must be prohibited. The same careful discipline, regularity of life and temperate habits should be carried out in the adult life of these individuals.

In referring to preventive treatment, I would especially call the attention of the practitioner to the fact that even slight head injuries may sooner or later become active factors in the causation of epilepsy, and such injuries should be closely examined and receive proper treatment, not only for the injury itself, but to prevent the possibility of a person becoming subject to epilepsy at a future time.

The treatment of epilepsy practically revolves itself into, 1, the treatment of convulsive seizures; 2, treatment, medical, hygienic and surgical, to prevent the recurrence of seizures; and 3, treatment of complications.

Previous to the onset of the seizure, many epileptics experience peculiar sensations, indicative of the coming outbreak. In such cases means should be taken to prevent the convulsion. Inhalation of nitrite of amyl, a hypodermic injection of nitro-glycerin or aromatic spirits of ammonia, or the application of a sudden shock of electricity will sometimes abort it if given immediately before the convulsion begins; even tying a bandage tightly about the part in which the aura begins, or the application of a counter-irritant will sometimes have a good effect. If the patient can tell for some hours previous to the onset of an attack, a single large dose of bromide of potassium and an active cathartic will generally abort or diminish the force of the seizure. In the event of a convulsion the patient should be prevented from falling and injuring himself. He should be placed in a recumbent position, preferably lying on the back with the head slightly raised, and the clothing about the neck loosened and a piece of soft wood or other similar substance should be placed between the teeth to prevent his biting the tongue.

The mucus should be carefully wiped from the mouth, and if food has been vomited (or if the patient was eating at the time of the seizure) the mouth and throat should be carefully examined and any portions remaining there should at once be removed. During the active muscular contraction, the patient should be gently but firmly held, to prevent injuring himself by striking against objects in the vicinity. After the convulsion has passed the patient usually remains

unconscious for a greater or less period of time, and if inclined to sleep should be allowed to do so, and after awakening should be encouraged to remain quiet for some time.

Of the many methods of treatment for epilepsy which have been used during the history of medicine, but few have been found which have a curative value. Among the drugs now used, the bromides still hold the chief place and are depended upon more largely than any other remedy. The alkaline bromides, either alone or combined, given in doses of from fifteen to forty grains three times daily, or given in combination with other drugs, are most frequently used. Many physicians prefer to limit the dose to the smallest amount which will cause a cessation of the attacks, while others carry it to the fullest toleration. Some have even recommended a single large increasing dose, beginning with one dram given in the morning at intervals of two to four days, until the maximum dose of four drams is reached. Then reducing the dose in the reverse order, spreading the course over a period of several weeks.

Bromides should preferably be given well diluted with water, and after meals, and in the case of nocturnal attacks, the whole daily dose can be given at bedtime with good effect. In all cases where "bromism" appears, the bromide should at once be reduced or discontinued for a time. A treatment of general tonics can be advantageously given in such cases. With proper care, a patient will tolerate the use of bromides for many months. The acne which follows the use of bromides can be easily prevented by the use of Fowler's solution.

Where bromides alone fail to give favorable results their influence can often be increased by giving them in combination with other drugs. Fleschsig's treatment consists of giving extract of opium, one-quarter grain, morning and afternoon, increasing at the rate of one-half grain daily until fifteen grains per day is reached, then discontinuing the opium and substituting thirty grains of bromide of potassium three times daily, gradually reducing the amount to a point where it can be continued with safety for a long period of time. It has been highly recommended by those using it; while it seldom effects a cure, it has special advantages in cases of long duration, and where the patient is of an irritable and violent disposition. Under treatment, the convulsions usually become

much less frequent and of diminished severity, and the patient experiences a sense of comfort and freedom from irritability which makes him cheerful and of a milder disposition. Borax, given in fifteen to twenty-five grain doses after meals, has been recommended for cases where bromides have failed, but is far inferior to the bromides in therapeutic value, and extreme caution should be used where it is employed, owing to its toxic effect. Gowers has used it in obstinate cases with good results.

Lactate of zinc, digitalis, belladonna, antipyrin and a host of other drugs have been recommended in the treatment of epilepsy and are occasionally effective.

The treatment of epilepsy can be materially simplified by the patient living a regular life and avoiding all things which tend to bring on convulsive seizures. The food should be plain and unstimulating, and meat and fat foods should be taken sparingly, but as a rule each person will require a special dietary, as what one could take with impunity would be very detrimental to others. Constipation should be guarded against. The avoidance of tobacco, alcoholic beverages and dissipation should be insisted upon. Out-door employment is generally better than in-door, but in all cases great care should be taken that the occupation is such as will not subject the patient to danger of injury by falling into machinery, water, or from a height while having a convulsive seizure. It is generally better for epileptics to always be accompanied by some one who can give them the necessary care during an attack.

The surgical treatment of epilepsy has come more prominently into use during the past few years. Under aseptic conditions, trephining for the elevation or removal of depressed bone has become common, and even excision of portions of the cortex of the brain have been made by some with the view of destroying the supposed "explosive center." Operations for the removal of diseased tissues and meningeal and brain tumors have also been followed frequently with good results. Simple counter-irritation, such as blisters or actual cautery, will cause an improvement. Even removal of old scars, nerve stretching, circumcision and other minor operations frequently have a beneficial effect.

Status epilepticus is seldom controlled by medicine. In-

halation of ether or chloroform are usually contra-indicated. Hypodermic injection of hydrobromate of hyoscin sometimes has a slight effect. The paroxysms either cease spontaneously and the patient recovers from the attack, or continue until exhaustion causes death.

Syphilitic cases require, in addition to the ordinary remedies, specific treatment.

Epileptic Insanity.—These cases should be cared for in an institution for the insane, as the existence of violent and homicidal tendencies makes it dangerous for them to be at large. The maniacal outbreaks can usually be controlled by hypodermics of hydrobromate of hyoscin, sulphonal, hot baths, etc., general treatment being the same as for other forms of mania. Dementia may follow from the effects of epilepsy and possibly from excessive use of medicines. Mild cases may be cared for at home.

It is to be regretted that the progressive State of Illinois has not yet provided a hospital for epileptics, where they would be cared for and treated in a systematic manner by physicians and nurses who make a specialty of this disease, and in event of its being of an incurable nature, to have a home provided by the State in which they may have the comforts and surroundings suited to their peculiar needs.

LA GRIPPE.

By B. M. SMITH, M.D.,

Vice-President West Virginia State Society, Member Am. Med. Assoc., etc.

IN the months of January, February, March, and a part of April, 1896, I saw a great many infants and children suffering with what is termed La Grippe. The symptoms of this disease are as follows:

In many cases the attack closely resembles an ordinary catarrh, with slight fever, dryness and swelling of the nasal mucous membrane, and increase in the secretion. In some cases the coryza is absent and the symptoms are those of varying intensity. We have pains in head, limbs and back, and congestion of the eyes. Often nervous symptoms are prominent, and you see convulsions in children or infants.

Affections of the respiratory organs are the most serious. Many cases present an intense bronchitis involving the large

and small tubes and coming on with high fever and sometimes delirium. These symptoms may be obscure at first, and not till the fourth or fifth day are the physical signs of a pneumonia detected. Pleurisy is not an uncommon complication. Occasionally, epistaxis may lead to a diagnosis of typhoid fever. We see in some cases a chilliness or even a distinct chill.

Case 1. C. W., infant, two weeks old, had a temperature of $104\frac{1}{2}^{\circ}$, pulse so high that it was hard to count. It seemed to suffer from pain in head and the bowels. It had about four or five stools in twenty-four hours, which were slimy and green. The tongue was coated white.

Treatment: R—Phenacetine, one-half grain was given every two hours until the fever fell; lactopeptin and subnitrate of bismuth in small doses was also given; and twenty drops of olive oil every four hours. The baby was well in four days, except a nasal catarrh.

Case 2. N. C., an infant, aged two years, had a cold, which the mother said began with a distinct chill. The tongue was coated white, and the temperature was $102\frac{1}{2}^{\circ}$, the pulse 180 to 190. It kept its hands to the head and was very restless. The bowels were regular and had a natural color. The eyes seemingly pained it when near a light. There was a cough, and the throat was congested. It received phenacetine, one and one-half gr. every two hours, until the fever fell; and for its cough received syrup of tolu, syrup of squills and a muriate of ammonia. It recovered in five days.

Case 3. J. B., infant, two and one-half years old, had a temperature of 100° . It coughed a great deal, and the tongue was coated white. This baby got a simple cough mixture and pepsin. As the temperature was not high I did not use phenacetine. The child had started in with chills and had vomited when first taken sick.

Case 4. S. B., a child, aged four years, had a coated tongue. The temperature was 103° ; pulse 160 to 170; bowels natural. Nervous symptoms were prominent. The delirium was intermittent. The mother said that the sickness began with a chill and high fever. I gave phenacetine, two and one-half gr. every two or three hours, with a little pepsin (two grs.) and calomel (one-tenth gr.). She was well in three days.

Case 5. D. R. D., child, aged about three years, started with chill and vomiting. The tongue was coated white at first, then yellow. The stools were slimy and at times bloody. The temperature was 103° , and there was pain in head and limbs. R—Phenacetine, one grain every two hours was given, till fever fell; pepsin and lime water quieted the stomach.

She did pretty well for a few days, when she developed a pneumonia. I then used cold whisky cloths over the lungs and bowels, and gave internally aconite and whisky. After about four weeks of sickness the child got well.

Case 6. M. C., an infant, aged nine months, had a temperature of 100° ; pulse quick; operations green and slimy. It also suffered from nervous symptoms, such as restlessness and pain in head and limbs. I gave phenacetine, one-half gr. every two hours, and chalk mixture, pepsin and lime water for the bowels. The next morning, at nine o'clock, no medicine had been given; the child was worse. The temperature was $102\frac{1}{2}^{\circ}$; the pulse 165; and the child was more restless. I gave phenacetine, one grain, instead of one-half grain, and in the evening found the child better, resting quietly. Next morning there were symptoms of congestion of the brain, and in spite of phenacetine, bromide of potash, and cold cloths to the head, the case died on the fifth day of sickness.

Case 7. Child, age five years, had pain in head and limbs; the tongue was coated white; the temperature was 102° ; the pulse 140; the bowels were regular. I gave phenacetine, two grs. every two or three hours, and discharged the case in two days, well.

Case 8. S., a boy aged six years, suffered with intense pain in head, limbs and back; the tongue was coated; the throat congested; there was some vomiting and slight cough; the temperature was $104\frac{1}{2}^{\circ}$; pulse 150 to 160, flighty at times. I gave phenacetine, one and one-half gr. every two hours; found the child sitting up next morning, and in three days was out on the street.

Case 9. I was called to see three children, aged, respectively, two, ten and twelve years. All suffered with pains in head and limbs; the oldest had some tonsillitis. The baby two years old was suffering with very painful sore eyes. The temperature of the older children was 102° , and pulse from 108 to 115, or even as high as 120; the baby's temperature was 101° . I gave a wash for the two oldest children's sore throats, and phenacetine, one-half to two grs. every two hours; the baby I gave a simple wash for its eyes. They were all well in seven days, except in the older ones a bad cough remained for some weeks.

Case 10. G. B., a child, aged three years, had a temperature of $103\frac{3}{4}^{\circ}$; pulse 160; tongue coated light brown. The stools were slimy and contained undigested food. There was some vomiting and chilliness, with pains in the head and limbs. There was some coughing, the throat was congested, and nervous symptoms were pronounced, so much so, I feared a convulsion. I gave phenacetine, two grs.; pepsin, one and one-half grs.; and calomel, one-tenth gr., every three hours.

I also gave something for the cough. The child was well in four days.

Case 11. G. K., an infant, aged two years, had a temperature of 103° ; pulse 140 to 160; there was some cough; the eyes were congested and the tongue coated white.

Treatment:

R—Phenacetine, $1\frac{1}{2}$ grs.

Pepsin, 2 “

Calomel, $\frac{1}{10}$ “

M. Sig.—One dose to be given every two or three hours.

The baby was well in five days, except for some little cough, for which I gave a simple cough mixture.

Case 12. D. P. S., an infant, aged fourteen months, had a temperature of 102° , and a very quick pulse; the tongue was coated yellow. It had had a convulsion in the beginning of the sickness. I gave it two grains of phenacetine every two hours, till fever fell or the nervous symptoms ceased. The child, after taking two doses, had no more trouble and was discharged after my first visit.

I could report many more cases like these, but I only wish to emphasize the point that I consider phenacetine the safest and best remedy in La Grippe in the infant. I have often heard and read of its depressing effects in pneumonia, La Grippe and other diseases of infancy and childhood. Having used it for five years or more, nearly every day, I must say I have never yet met with a single case of depression. I have given as high as five grains at a dose to an infant eighteen months of age, with no depression. I used it in this case on account of a threatened convulsion which passed away, and the child quieted down and went to sleep. I rarely give over six grains to an adult, and only once gave so large a dose as five grains to an infant, as reported above. I generally give from one-half to two grains to children, with careful directions when to stop it.

REPORT OF A CASE OF GLANDULAR FEVER.

By CHARLOTTE C. WEST, M.D.,
Philadelphia.

SIX months ago there was but little published in America and England on glandular fever; the Continental observers, however, have been showing an increasing interest in the subject since the publication of Pfeiffer's¹ memoir in 1889.

(¹) Jahrbuch für Kinderh., 1889, Band xxix, p.

Dr. Samuel M. Hamill has presented the first exhaustive account of glandular fever in American medical literature in the June number of the *University Medical Magazine*.

The report of a case which came under my observation recently may prove of interest at this time.

My little patient, Frankie C., aged two years and eight months, is a large, splendidly developed boy. Though ill cared for and living under rather unfavorable conditions, he hitherto has had perfect health. During the first week in May he was ill several days with rotheln. It was a mild, typical attack, and ran a short course. In five days he seemed as well as usual.

Four days after I was again called in. In the meantime he had been allowed to play in a bare, damp room and run out into the yard during a chilly, wet day. I at first believed the child had parotitis, but upon closer examination found the following conditions: a uniform, bilateral cervical adenitis, involving the submaxillary and sublingual glands, which were so swollen that they reached the lower border of the inferior maxilla. The lymph glands below the mastoid process and at the upper third of the sterno-cleido mastoid muscle (the post-auricular glands) were as large as walnuts. They were hard and painful to the touch. The skin was tightly drawn over the swellings. It was not reddened, and there was no edema.

The little patient held his head rigid, seemingly unable to bend it in any direction. Pain upon swallowing was complained of. There was profuse coryza. The fauces were deeply injected; the tonsils were not hypertrophied. The mouth, throat and nasal chambers were filled with a tenacious, glairy mucus. There was no enlargement of the liver, spleen, axillary, or inguinal glands.

There was constipation, but no abdominal distention or tenderness.

There was no vomiting. Anorexia was complete. The tongue was slightly coated. There was headache and much irritability, with great pain in the lower limbs.

The temperature when first seen was 104.5° F. After the first day it fluctuated between 101° and 103° F. The child rapidly became greatly prostrated. He was extremely restless. On the third day there was almost complete suppression of urine, about a drachm being voided in twenty-four hours.

This partial suppression continued for six days, despite all medication, not more than a drachm or two being passed in twenty-four hours during this time. Albumin was never observed.

The patient's nights were spent in ceaseless tossing and wakefulness, with profuse sweats.

Large doses of the bromides and chloral had no quieting effect, while diuretics increased the depression, which was now extreme.

Had I not felt so positive of my diagnosis and reposed such absolute confidence in the observations of Pfeiffer, Protassow, Comby and others, I would certainly have given an unfavorable diagnosis. So critical seemed my little patient's state at this time, however, that I thought of calling in counsel, when the temperature suddenly dropped to 97° F., the kidneys began to act more freely, though still feebly, and the swelling gradually decreased.

The temperature remained subnormal for several days, when it became normal. After three days it again rose to 102.5° F., accompanied by a swelling of the glands at the nape of the neck and lower border of the occipital bone (the occipital glands). They were about the size of a cherry. There was now a complete ring of swollen glands around the neck.

At no time did the glands fluctuate or show a tendency to suppurate.

The temperature remained elevated for three days, when it dropped to normal and improvement progressed uninterruptedly.

The patient was now in the fourth week of his illness, greatly emaciated, anemic and extremely weak. At this time, six weeks after the disease manifested itself, the glands are still somewhat swollen, though not painful; convalescence is greatly protracted.

A culture from the throat, made by W. S. Gillespie, showed an extensive growth of streptococci, thus bearing out the observations of Desplats, Neumann, Hamill and others.

During the first week of the little patient's illness, an exanthem, resembling urticaria, but without itching, appeared upon the lower extremities. It lasted four days, and did not reappear.

There were no other children in the house. Two young

adult females, who assisted in the care of the patient, were ill for several days during this period, complaining of angina, headache, constipation and general lassitude.

The fact that this disease in many of the reported cases followed one of the infectious fevers, or attacked strumous children, seems significant.

May it not be due to a special organism which finds in these intoxicated constitutions a suitable field for the propagation of a germ which might otherwise prove inert?

The disease does not seem to be a common one, Pfeiffer's belief to the contrary notwithstanding. Protassow² thinks it is rare, and calls attention to the fact that Rauchfuss in his extensive observations had only met with two cases.

If caused by the action of the streptococcus or staphylococcus, it seems likely that we would have many more opportunities for observing and studying this very interesting condition.

The use of the antistreptococcal serum might be of some value. I have seen no reference made to it in connection with this disease. The weight of opinion, however, is doubtless with Combemale,³ who believes glandular fever to be a particular malady having its particular microbe still unknown.

A SIMPLE METHOD FOR REMOVING FOREIGN BODIES FROM THE NASAL CAVITIES OF CHILDREN.

BY GEORGE BIESER, M.D.,
New York.

THERE are many ways of removing foreign bodies from the nasal cavities of children, among which may be mentioned the following: Removal by pliable silver or copper wire; removal by forceps; removal by scoop or bent probe passed behind the body and drawn forward; removal by straight probe which, gently inserted into the nostril, pushes the body into the naso-pharynx.

The employment of such methods in struggling children without anesthesia is attended not only with the dangers from traumatism, but also with difficulty and occasional failure.

(²) Jahrbuch für Kinderh., 1891, Band xxxii, p. 363.

(³) Gourichon-Gaz. hebd. de méd. Par. 1896, xliii, 13-17.

The employment of aerodynamics may overcome these objections. The method usually employed is the following: The child is placed, face upwards, across the knees of an assistant, who firmly seizes the child's legs and arms; the operator, placing a handkerchief over the child's mouth, compresses the nostril opposite the one holding the foreign body and blows strongly into the child's mouth. This method, though efficacious in many instances in the removal of cherry pits, beans, beads, etc., is open to the objection that the children into whose mouths we blow often have a muco-purulent discharge from the nose, which may be blown into the operator's face.

This can be eliminated by resort to the following very simple and cleanly method: The child is placed in the ordinary position for intubation, the assistant holding his hand snugly over the child's mouth; one end of a piece of rubber tubing is snugly inserted into the nostril opposite the one holding the foreign body, the other end is inserted into the operator's mouth; the operator then blows suddenly and vigorously into the nostril and dislodges the offending body. The simplicity, cleanliness and efficiency of this method will become apparent in describing the following case:

Kate B., aged 2 years, was brought to me by her father with a history of having put a shoe button into her left nostril; a physician had tried to remove it, but had only succeeded in pushing it further back. Upon examination, no button was discernible; but there was a muco-purulent discharge from the left nostril, and the child was unable to breathe freely through that nostril. I resorted to the above simple method and dislodged the button upon the second attempt.

Besides being cleanly, this method, no matter how much the child struggles, causes no traumatism, and, what is of more importance, it is at every physician's command.

Another cleanly and efficient method of proceeding is to use O'Dwyer's artificial forcible respiration apparatus. Select a laryngeal tip which will snugly plug the nostril; screw it to the tube, rotating the distal portion of the tube toward the left to an angle of 130° to 135° from its original downward position; then use a washer of thread, leather or lead at the joint between the proximal and distal ends of the tube to prevent the escape of air during insufflation with the bellows. An assistant, sitting firmly upon a chair, holds the child in the ordinary

position for intubation; the operator, standing behind and to the right of the child, passes his left arm behind the assistant's neck in such a way that his forearm and wrist hold the child's head firmly against the assistant's head and left shoulder, the operator's left hand firmly closing the child's mouth. The



tube being connected with the bellows, and the opening for expiration being closed by the ball of the thumb of the right hand, is then inserted into the nostril opposite the one lodging the foreign body. Air is then suddenly driven into that nostril by the right foot working the bellows.

The following case suffices to demonstrate the efficiency of this method: John K., aged $4\frac{1}{2}$ years, gave a history of obstruction of the left nostril; he admitted having put a coffee bean into that nostril. I expelled the bean easily.

Before closing, I would emphasize the following points:

1. Do not employ the last method where the foreign body is too firmly impacted; the forcible insufflation here may injure the internal ear.

2. These methods can always be tried, especially in struggling children, where for some reason or other anesthesia is undesirable.

3. Always be sure in employing the last methods that the mouth is firmly closed during the insufflations.



EDITORIALS.

DEFECTIVE EYESIGHT IN CHILDREN.

DEFFECTIVE eyesight in children is a matter attracting much attention at the present time. The subject has been more or less forced upon the notice of the general public owing to its increase. The question of sight affects directly or indirectly every one. Through school and college course, in the choice of a profession or trade, to both sexes and in whatever sphere of life, vision is of paramount importance. That eyesight is degenerating is universally acknowledged, and as a matter of course the eyes of children share in this degeneration. It is one of the conditions inseparable from our advanced state of civilization, and that this is so is proved by the fact that the eyesight of those leading a primitive life or of those who have been only receiving the benefits of education and progress for a few generations has suffered no or little injury. The intellectual activity of a people may be very fairly gauged by its eyesight, the higher the brain development the worse the power of sight and vice versa. A nation of students and bookworms as the Germans, show an enormous percentage of sufferers from myopia, while on the other hand races existing in a more arcadian state, despite their bad sanitary conditions, supply but a very small percentage of such cases. Statistics bearing upon this matter are, as they are prone to be always, somewhat variable and conflicting. Dr. William Carhart found, upon examination of 1,000 American school children, 48.5 per cent. astigmatic, 44 per cent. hypermetropic, and 3.5 per cent. myopic. Dr. Frank Allport gives the average of myopics attending the public schools in the United States at 30 per cent., while the examination undertaken about a year ago of 8,000 children attending

elementary schools in London revealed the fact that out of this number but 39.5 per cent. possessed normal sight; slight and moderate degrees of hypermetropia were found to be the most common defects, and myopia was comparatively rare. The point of most interest in these examinations was the large number of children who possessed only sub-normal vision. From statistics, although not agreeing in all details, sufficient information may be gathered to emphasize the fact that in all civilized countries the number of children with defective eyesight is a very large one. The present race are not the only sufferers, but these defects will be handed down to future generations, with what ultimate disastrous results it is impossible to foretell. Many of the causes of, or aggravating aids to, defective vision in children are not far to seek: they are badly lighted, unsanitary rooms, very small print, uncomfortable seats, faulty position, too long hours of study; all these details should be looked to, and the children's condition during school hours be rendered as perfect from a health and comfort point of view as possible. The difficulty then occurs, how is defective vision to be detected, for the early correction of the refractive error, and especially of the astigmatic element, is of great preventive value. The plan proposed by the Germans that there should be district medical men who should yearly examine and report on the state of the scholars' vision, must be put aside as too expensive. Dr. Allport's method of training school principals and rendering them competent to detect and notify cases is worthy of consideration. There are countless numbers of little ones whose eyes are quite unfit for the close work they have to do, and are compelled to get through their daily routine in the best way they can, and any plan that can be devised to remedy this evil will be welcomed.

UNNECESSARY STREET NOISES.

THE strong feeling against unnecessary street noises, which for some time has been smouldering, has now almost reached conflagration point, and only requires a little judicious fanning to break into flames. The inhabitants of large cities whose nerves have been shattered and rest disturbed have almost reached the limit of their endurance. The fact, too, is recognized, and adds to the ire of the victims, that most of these noises are quite superfluous, and serve no useful end. In all the large towns of the world this evil is present in a greater or less degree, but in no one of them in a more acute or aggravated form than in New York. London has its street noises, unpleasant without a doubt, some of them peculiar to herself, of which the shouting of newspaper men and boys and the playing of street organs are the most predominant, but she can hardly rival the pandemonium of disturbances continually prevailing in some of the streets of this city. The noises here have an especially irritating, jarring effect on the nerves, the metallic rattle of the trains on the elevated road, the booming of the cable cars, frequently varied by the clanging of their gongs, the rumble of the heavy traffic over the rough and uneven roadway, the tinkling of the bells on the hucksters' carts—not forgetting the shrill whistling of the letter carriers—all these combine to make up an aggregation of discords not equaled by any other city. That noise is in a high degree prejudicial to health is a truth not to be denied, in the case of nervous invalids not infrequently fatal. That many of these street noises are quite unnecessary is just as evident. There are few physicians who have not been witnesses of the harmful influence of noise on many a patient, and who cannot recall more than one case where if absolute rest had been obtainable life might have been saved. The increase of lunacy is a source of dismay and surprise both to the medical profession and the general public. May not some of this increase be laid to the charge of noise?

In these days of rush and worry, when the nerves are more or less ever on tension, it seems absurd that, added to the unavoidable noises one should be also subjected to those which might be easily suppressed without doing harm to any one. There are many ways of abating these nuisances to a large extent. Why should not asphalt or wood be substituted as pavement for the stone block and cobble now in use? Why should not the street hawkers and other propagators of unnecessary sounds be stopped by law? Why should not tradesmen's wagons be tired with India rubber? Doubtless the initial cost of these improvements would be large, but the gain in health and comfort would be ample compensation for the outlay. In London the law is about to step in and put down with a strong hand all unnecessary street noises. A by law suggested by the Home Secretary has been in force for some time in many of the provincial towns of England, and will soon, it is hoped, be in London. This law is stringent in its enactments, and will doubtless have the wished-for effect. There seems to be no valid reason why New York should not follow suit.

THE INFLUENCE OF CYCLING ON WOMAN'S DRESS.

IF the bicycle has done no other good, the thanks of the community at large are due to it for bringing about at least one useful reform. The glad news has come from Paris, whence are issued the decrees of woman's world of fashion, that it has been decided, after mature deliberation, to increase the size of the waist of a society woman by three or four inches. The bicycle is responsible for this wonderful innovation. In Paris, more than in any other city, the cycling rage has taken hold among women. The truth was soon discovered that the exercise required more freedom of respiration and movement than the corset permitted. For a considerable time the discomfort induced by the tight corset was heroically endured, but little by little more latitude was allowed to the

suffering organs, and eventually the ladies became convinced that this liberty, while conducing greatly to their comfort in no way detracted from their appearance. The women of Paris are much to be commended for the common sense they have shown in this respect, and without a doubt their example will soon be followed by ladies in all parts of the world. Ladies' dress has always been a drawback to their healthy enjoyment of cycling, and of all parts of their attire the tight corset has been the chief offender against the laws of hygiene and comfort. It may be said that at last their dress is becoming really rational.



SOCIETY REPORT.

THE CLINICAL SOCIETY OF LONDON.

Meeting held on March 26, 1897.

Dr. PASTEUR read a paper on an **Epidemic of Infantile Paralysis** occurring among children of the same family. The epidemic was limited to this household. Every one of the seven children in the family was attacked in rapid succession within the space of three weeks, with fever of moderate severity, accompanied by severe headache. In three of the children, aged eleven, nine, and five years respectively, paralytic symptoms supervened within seven days of the commencement of illness. The type of paralysis varied in the different cases. In one there was flaccid paralysis of the left arm; in another right hemiplegia, with marked and persistent muscular rigidity of the arm and leg, with more transient paralysis of the face and soft palate on the same side; whilst in the third case there was paralysis with rigidity limited to the left lower limb. In two more the primary fever was followed by tremors, lasting only a few days, whilst in the remaining two the primary fever was not followed by any nervous disturbance. As regards the cause of the outbreak, it was possible to exclude the acute exanthemata, diphtheria, and influenza. The points of resemblance to infantile paralysis were held to justify the diagnosis in spite of the remarkable characters of the paralysis. The cases prove that a poison giving rise in one instance to a paralysis indistinguishable from the acute atrophic paralysis of childhood, is also able to determine lesions in other parts of the nervous system. They further strongly confirm the growing impression that infantile paralysis is an acute infective disease.

Dr. ORMEROD wished to suggest the possibility of the primary disease being epidemic cerebro-spinal meningitis. The sequelae in some of the cases would correspond with this diagnosis. At the same time he thought the cases taken together were not typical of cerebro-spinal meningitis, or of infantile paralysis.

Dr. BEEVOR had had an opportunity of seeing one of the cases and regarded it as suggestive of anterior poliomyelitis. The second case was of a cerebral type, and the persistent rigidity pointed to meningitis. The last case was more like infantile paralysis, although here also the rigidity was an unusual feature. On the whole he inclined to a diagnosis of anterior poliomyelitis.

The President (DR. BUZZARD) thought that the paper was one of great value in adducing evidence of the infective nature of anterior poliomyelitis acuta. Further it showed that the lesion was not necessarily confined to the anterior horns of the cord. He was inclined to see in this affection the action of some toxic agent, which under certain circumstances might affect the anterior horns only, and under different circumstances might affect other parts of the nervous system. He related the case of a boy who had a well marked attack of anterior poliomyelitis, and whose sister at the same time had a febrile attack, which passed off without leaving any paralysis. This limitation of illness to a febrile attack only, was well known in connection with other specific fevers. The various paralytic sequelæ in the author's case pointed to the selective nature of toxic agent, in some cases the anterior horns being affected, in others probably the lateral tracts also, and in others the brain. He hoped that those who had the opportunity of seeing such cases in the acute stage would carefully enquire as to the existence of other cases of febrile attacks in the house or in the neighborhood, and would have the blood examined bacteriologically. The affection was so terrible in its sequelæ that every effort should be made to discover the cause, and then possibly some antitoxin might be elaborated which would give them more command of the disease than they possessed at present.

Dr. CAYLEY said that the paper showed that infantile paralysis was not confined to infants, and was really an acute infective disease. In the light of this knowledge, it might be well to discontinue the use of the term infantile paralysis.

NEW YORK ACADEMY OF MEDICINE.—SECTION
ON PEDIATRICS.*Stated Meeting, May 13, 1897.*

Tumor Resembling a Spina Bifida.—Dr. J. LEWIS SMITH presented an infant of three weeks, having a large tumor in the situation of a spina bifida. The tumor measured 13 inches in circumference, and in places its walls were translucent. There was nothing abnormal about the mother's pregnancy. Dr. Smith expressed the opinion that the case was one which was beyond either medical or surgical aid.

Dr. ARTHUR L. FISK said that in a case of spina bifida that he had treated, the meningocele had had a small pedicle, and there had been no associated nervous disturbances. The tumor was removed by excision, and for a time the outlook seemed very good. In the course of a few months hydrocephalus developed, and the child died.

Dr. HOLT expressed considerable doubt about this being a case of spina bifida. He said that there was not present the usual cicatrix, it was more or less lobulated, a portion of the tumor was evidently solid, and altogether the appearances were more like those of sarcoma. He would accordingly be in favor of exploratory incision. He recalled a case of caudal tumor that had given rise to no paralysis of the bladder, rectum, or extremities, and which Dr. Lange had successfully removed.

Dr. C. E. NAMMACK also expressed the opinion that the case was one of cysto-sarcoma.

Congenital Constrictions of Extremities; Webbed Fingers and Toes.—Dr. ARTHUR L. FISK exhibited plaster casts and photographs of a patient, 4 years old, who had been admitted to the Babies' Hospital in January, 1896. There was a deep sulcus in each leg below the knee. He had excised the rudimentary finger on the left hand, and by cutting the plantar fascia, tendo Achillis and external lateral ligament, had reduced the talipes equinovarus. After the foot had been kept in the corrected position for about two months, the plaster had been removed. The child now walked well without artificial support.

Skiagraphs of Bow-legs Before and After Operation.—Dr. FISK also exhibited a boy of four years, on whom he had

done a double cuneiform osteotomy last January. The feet had been kept in plaster for two or three months, and there was now a good result.

Intra-cranial Sequelæ of Neglected Middle Ear Suppurations in Children.—Dr. EDWARD B. DENCH read a paper with this title. He demonstrated by specimens that the external auditory canal in the very young infant was not a bony, but a fibrous tube, and that in order to inspect it properly, the auricle should be drawn downward and backward. He also called attention to the fact that the mastoid antrum was the only mastoid cell existing at birth.

Dr. Dench said that the complications that might follow suppuration of the middle ear were: (1) Sinus thrombosis affecting usually the lateral sinus; (2) epidural abscess; (3) diffuse meningitis; (4) cerebral abscess. The gravest of all complications was general meningitis, and this was largely due to the fact that the diagnosis could not be made with certainty sufficiently early to allow of operative interference. His own experience with post-aural abscess had led him to attach more importance to it than did many writers. He felt that a physician should not rest satisfied until, in addition to opening the abscess, he had thoroughly cleaned out the mastoid process. There was danger of infecting the intra-cranial structures so long as any necrosed bone was present. The prognosis should be invariably favorable in inflammation of the middle ear if the condition were promptly and efficiently treated. This statement held good even in cases in which the inflammation of the ear was associated with a severe form of some of the acute exanthemata. The accumulation of fluid in the middle ear quickly gave rise to a characteristic narrowing of the canal, obstructing the view of the lower part of the drum membrane. If there were much tumefaction, a long, narrow knife should be used to incise the membrane, and then the incision should be enlarged upward, the knife being kept close to the bony inner wall of the middle ear. A mere puncture of the membrane was not sufficient. After incision, the ear should be irrigated with a 1:1000 solution of bichloride of mercury. The use of a cotton drain was painful, and often made recovery more tedious.

Dr. HERMAN KNAPP said that suppuration of the middle ear must occur in the antrum, but the process might extend

into the upper portion of the mastoid and into a notch in the membrana tensor, at the point where the middle ear was covered only by skin and subcutaneous tissue. He had known this portion sometimes to swell suddenly, and give the appearance of extensive suppuration, and yet it would subside just as unexpectedly.

Dr. Knapp then detailed several cases bearing upon the subject of the paper, and illustrating certain special points in connection with the operation or after-treatment. He cited a case in which he had operated upon the mastoid in a sickly child of a year old. He had found the inner wall of the mastoid destroyed, and the dura and sinus covered with a thick, bluish mass. He had removed this with a spoon down to healthy tissue. The appearance of this mass was suggestive of a tuberculous osteo-myelitis. The child had improved greatly after the operation, and now, six months later, was doing very well. Cases of epidural abscess and pachymeningitis should be invariably cured by proper and early treatment. In a case of abscess of the temporo-sphenoidal lobe, occurring in a child of ten years, he had also operated successfully. When he had first seen the case, there had been a copious and foul discharge from the ear, and hemianopsia and double optic neuritis were present. The operation was very tedious, and after about two hours no abscess had yet been found. As experience showed that most of these abscesses were in the center of the temporo-sphenoidal lobe, a very large trephine opening was made at this point. The dura looked normal, but nevertheless pus was withdrawn with a needle. The abscess was evacuated by free incision. After the operation a large hernia cerebri appeared, and still later an abscess formed in this hernial protrusion. Instead of slicing off a portion of the hernia, he simply kept it aseptic, and eventually it was all withdrawn into the brain. All discharge from the ear had ceased.

Dr. EMIL GRUENING said that it was not such an easy matter to inspect and incise the drum membrane of the ear as one might infer from the statements made in the paper. It was proper, however, to insist that when an accumulation of fluid was to be evacuated, an incision and not a puncture should be made into the drum membrane. He thought the case referred to, in which no discharge from the ear had been observed dur-

ing life and yet pus had been found at autopsy, might be explained by the fact that when meningitis supervened, the discharge from the ear often ceased. If, therefore, the case were first seen at this stage, the condition found might prove misleading. He thought sinus thrombosis was quite frequent in children, but it was the exception for these sinuses to be examined at autopsies.

Dr. J. F. MCKERNON heartily approved of what had been said about the necessity for free incision and removal of necrosed bone in cases of post-aural abscess. He had found a weak solution of formalin useful for irrigating the ear.

Dr. FISK expressed his surprise that the lateral sinus should be opened and curetted upward and downward, especially downward, without first tying the vein. The risk of detaching an embolus was certainly very great. In the successful cases that he had seen Dr. Abbe operate upon, the jugulars had been tied, and the thrombosed portions of the sinus irrigated and cleaned out. He had used with satisfaction in the cases of middle ear disease coming under his care, a saturated solution of boric acid, or a diluted solution of peroxide of hydrogen.

Dr. H. W. BERG said that bacteriological examinations of the discharges from the ear in cases just recovering from diphtheria, rarely showed the presence of the diphtheria bacilli. The disease of the ear, therefore, in these cases was due to mixed infection. He had been surprised at the comparative rarity of mastoid disease in the Willard Parker Hospital, where so many children with scarlet fever and diphtheria were treated, and he was inclined to believe that this was due to the method of irrigation in vogue there. The patient is always placed on the side, and the irrigating fluid allowed to flow from a fountain syringe raised only a little above the level of the patient. No attempt was made to force the fluid in one nostril and out of the other, and the rule was to irrigate always through the *lower* nostril, and then turn the patient over, and irrigate through the other nostril, which would then be the lower one.

Dr. DENCH, in closing the discussion, said that it seemed advisable to always explore the jugular sinus downward. If firm pressure were made on the anterior border of the sternomastoid muscle while this exploration was being made, there should be no need for ligation. The question of ligation was still a mooted point.

ABSTRACTS.

DIPHThERIA IN AN INFANT NINE DAYS OLD.

D. G. SANOR (*N. Y. Med. J.*, 1897, *lxv*, 868), on the evening of November 7, 1896, was called to see a sailor's wife suffering with some form of laryngitis, and presenting a history of hoarseness that had continued for four or five days. Deglutition was painful, and there was light dyspnea. The temperature was 101° and the pulse 90. There was slight cough and considerable anorexia. As she was subject to such attacks, the family had paid little attention to the matter prior to the above day. There was no history attainable at the time of exposure to diphtheria, but such was subsequently found. The family was then living in an isolated country place. The young woman was pregnant and about at full term. She was a primipara.

Early the following day she was in labor, and by night was delivered. The labor was normal, but all the while her condition was becoming graver. The swelling of the tonsils was so severe that the pharynx could not be closely examined. Laryngeal cough and dyspnea increased, and cyanosis became very marked. The patient grew rapidly worse. She was placed upon old-line treatment, but without apparent effects. At this time the temperature was 105° , the pulse 140, and respiration 40. The same night coma set in and death followed.

On the 14th of the same month he was called to see the husband, also suffering from diphtheria. The membrane was confined to the pharynx and was quite extensive. He was placed upon old-line treatment, iron, mercury, whisky, and hot bichloride-of-mercury gargles being employed. After two weeks of active treatment he was convalescent, but a slight paralysis of the organs of deglutition followed and continued a few months. This was followed by profound anemia, which still persists.

While he was attending the husband both the infant and the grandmother were found to have diphtheria. This was upon the 15th of the month, or when the child was only a week old. The treatment on the first day was with whisky and iron. The exudate filled the nose and throat, and the babe refused to take nourishment. On the 16th all the symptoms were severer, and he decided to use antitoxin. Accordingly he administered five hundred units of Mulford's potent antitoxin. This was given at 10 A. M. At 2 P. M. the babe began to nurse. At 6 P. M. the dose was repeated. The case

had then greatly improved. The following day the membranes were all found detaching excepting those of the uvula. He gave another dose of two hundred and fifty units, and at night found the child apparently well. With the exception of slight paralysis of the muscles of deglutition, which appeared in the third week, recovery was speedy and uneventful. The antitoxin produced prompt results, and not even a rash followed.

The grandmother had severe pharyngeal diphtheria. In the height of her suffering she was unable to swallow even liquids. She was treated with one thousand units of extra-potent antitoxin and required only one dose. She made a complete recovery.

DISSEMINATED INFECTIOUS GANGRENE OF THE SKIN IN CHILDREN.

MÉDÉRIC CAILLAUD (*Revue Mens. des Mal. d. L'Enfance, Jan. and March, 1897.*)—This form of gangrene has some special features which distinguish it from other forms of gangrene, as diabetic, toxic or trophoneurotic.

It appears under two different conditions: First, there may be a previous ulcerative skin lesion, from and upon which the gangrene starts. Second, the gangrene may appear immediately after a non-ulcerative manifestation of the skin, and it is not an occasional accident, but it constitutes an essential element of the disease. All causes which will put the child in unfavorable conditions and impair its general health predispose to that contagious affection, and especially all sorts of existing ulcerations and erosions may serve as a door of entrance for the contagion.

There are reported cases of so-called primitive gangrene of the skin, when it was entirely free from erosions, but not in an absolute healthy condition, as in cases of erythema nodosum, with or without purpura.

Upon the nodules of erythema nodosum or upon purpuric plaques appear pin-head size vesicles filled with an opaque liquid. In twenty-four hours the vesicle is changed in a pustule, surrounded by a dark-brown border and a red, several cm. wide, outside zone. The next day the pustule reaches the red outside border. On the fourth a dark crust, adherent to the deep tissues, is formed, surrounded by a grayish border, which separated the necrotic from the inflamed tissues. The grayish border is surrounded by a red zone and the skin around the zone is inflamed, swollen, and gives to the touch a feeling of skin of a corpse, preserved in ice.

In eight to fifteen days the crust falls off and a deep circular ulceration is visible. The sore is always circular, unless it follows an application of mustard plaster, when it is serpiginous. In forty days a scar is formed.

It is mostly localized upon the lower parts of the abdomen, upper parts of the buttocks. Sometimes the face and scalp are affected. The hands and feet are generally left free.

It is accompanied with severe general symptoms, fever, vomiting, and with albumin in the urine. With the appearance of the gangrene, the fever disappears. Developing upon existing skin lesions as varicella, vaccine, impetigo, it follows mostly the same course, with slight variations. In most of the cases, especially when long complications intervene, the prognosis is unfavorable. Without complications, the prognosis is more favorable if the child is advanced in age. Iritis, kerato-conjunctivitis and purulent arthritis are also common complications. Bacteriological researches show that the disseminated gangrene of the skin is due to a pyogenic infection of the skin, helped either by one particular microbe, which has not been isolated up to the present time, or by a thrombus of the vesicles, which impaired the nutrition of the skin. The treatment consists of daily baths in a three per cent. solution of boracic acid, in 1:10,000 solution of sublimate of mercury, followed by an application of boracic acid solution or carbolic water. When the crusts are off, antiseptic powders are indicated. Iodoform-collodium is to be avoided.

CALOMEL IN THE GONORRHEA OF THE NEW-BORN.

PUKALOW, A. (*Dietskaja Medicina*, 1897, p. 184), tried calomel in fifty-seven cases of gonorrheal ophthalmia with very satisfactory results. Cleaning the eyes with a two per cent. solution of boracic acid and drying them with absorbent cotton, he applied calomel with a camel's-hair brush to the everted eyelid. The next day the discharge was greatly diminished and also the edema of the eyelids. After two to three applications the eyelids are no more closed in the mornings and then he uses the usual astringents. In seven days he attained a cure, but in one chronic case it took 14 days to bring the disease to an end.

The advantage of calomel over nitrate of silver lies in the entire absence of any danger; it can be used by the mother herself, while we would not trust nitrate of silver in the mother's hands.

Calomel does not produce a scab, as nitrate of silver, and as a powder it penetrates easier into the disintegrated affected membrane and reaches better the infectious element.

A STUDY OF GONORRHEAL VULVO-VAGINITIS IN SMALL GIRLS.

A. B. MARFAN (*Rev. Mens. des Malad. de L'Enfan.*, 1897; March, '97, 122). Vulvo-vaginitis is mostly of gonorrheal origin, especially the inflammatory kind. It occurs between the second and seventh year, but it may happen in the first

fifteen days after birth; and it is rare after the seventh year, as there are less chances for infection.

Spots on the shirt and a severe itching sensation are usually the first signs which induce the physician to examine the child.

The discharge is not limited only to the vulva, the vagina is taken in too. If kept unclean the discharge dries up in yellowish crusts, which emit a very disagreeable smell and cover erosions of the mucous membrane. The lips are swollen and slightly painful. In most cases vulvo-vaginitis is of gonorrheal origin, but there are cases of vulvo-vaginitis due to other causes, as saprophytic, pyodermic, etc. If the vulvo-vaginitis be from the beginning inflammatory and purulent, and if it does not yield in a few days to simple cleanliness, we may accept it as gonorrheal.

The source of contagion may be divided in (1) family source, (2) hospital source (thermometer, etc.), (3) school source (closets), and (4) venereal sources. The last one is the smallest in number. Beside the local troubles, vulvo-vaginitis is very important on account of the metastases it produces by (1) propagation, (2) by inoculation, and (3) by general infection. By propagation every organ in the genito-urinary tract may be attacked; the bladder alone is an exception, as in infants it is mostly due to coli-bacillus, but the peritoneum gives rise to serious, sometimes mortal results. Gonorrhea is of the four important causes of peritonitis, (appendicitis, pneumococcic infection and typhoid fever) the most frequent. By inoculation gonococcus may be transferred to the eye, and by general infection it may produce arthritis, endocarditis and pleuritis.

Gonorrheal arthritis was seen in children of 12 to 18 days of age, while the rheumatism of non-gonorrheal origin is seldom seen before the fifth year. It attacks usually one joint and remains stationary at that joint, not jumping from one to another as in non-gonorrheal rheumatism.

The joint is painful, swollen, hot, covered with an extended, shiny, red skin. The involution sometimes takes place without any incidents, and the prognosis is more favorable than in non-gonorrheal rheumatism.

Mostly the knee-joint is affected, but the infection may extend to other joints: wrist, malleolus, to small articulations of the hand and foot, and the coxo-femoral joint. Sometimes the synovial capsules are also involved.

Treatment consists in checking the propagation and curing the affected parts.

Luke-warm solution (1:1000) of R. H. applied daily as a wash to the external genital and urinary organs and inside of the vagina will give the best results. This is to be continued for a period of three weeks.

In chronic cases when the R. H. washings fail, sublimate

of mercury solution of 1:10000, nitrate of silver 1:3000 may be used; and iodoform bougies will be of service. The treatment of rheumatic joints is limited to absolute immobilization with subsequent massage. But we must bear in mind not to prolong the immobilization and not to begin the massage too early, as the process may be revived. Internally, salicylate of soda, salophen and antipyrin may be given. Locally a ten per cent. salicylic ointment is advisable if the child does not tolerate internal remedies. In purulent arthritis with abundant amount of pus, a puncture and later arthrotomy is indicated, although gonorrheal pus is sometimes absorbed without interference.

LEMON JUICE AS A PREVENTIVE OF THE GONORRHEA OF THE NEW-BORN.

SZAWELSKI (*Gazeta Lekarska*, No. 38, 1896) saw during his stay at Prof. Pinard's clinic in Paris, the application of lemon juice in gonorrheal ophthalmia with remarkable results.

Several drops of lemon juice are put in the conjunctival sac. It is entirely harmless and is at hand in every household. He reports a striking case with good results.

CASE OF A CONGENITAL TUMOR IN THE SACRAL REGION OF AN INFANT.

B. KRUTOŃSKI (*Dietskaja Medicina*, 1897, p. 205). Boy two days old was born with the tumor attached, with a short peduncle to the left side of and a little above the anal opening. The tumor consisted of two parts: the upper the size of an adult male fist, hard and round, and the lower soft, fluctuating, divided from the first by a neck-like band. Both parts are covered with skin, and the upper part is covered with hair.

The dermoid tumor was cut off; it weighed three and one-half pounds, while the child, without the tumor, wrapped in a sheet, weighed six pounds.

The tumor consisted of small cysts; in the peduncle two small bones, probably from the os coccyx, were found.

INTUBATION IN DIPHTHERIA.

T. H. HALSTED (*N. Y. Med. Journal*, 1897, l, 793) bases the following conclusions on an experience of fifty-seven cases of intubation in private practice:

(1) Laryngeal diphtheria, in any epidemic, is never mild, but has always had a mortality of from ninety to ninety-five per cent., reduced by operation, intubation or tracheotomy, to from seventy-two to seventy-six per cent.

(2) The report of his cases shows a mortality of intubations without serum of seventy-six per cent.; in conjunction with serum of twenty-five per cent., and eliminating cases of death within twenty-four hours of injection, a mortality of ten

per cent. The reduction of mortality from seventy-six to ten per cent. is to be credited to antitoxin.

(3) Antitoxin should always be administered as early as possible, and in laryngeal cases without waiting for the bacteriologist's report. If this is done it will usually prevent an extension to the larynx, or, if the larynx is already invaded, an early injection will frequently cure without need of operation.

(4) No child should be allowed to die of laryngeal stenosis without an operation, preferably intubation, and serum should be injected at once regardless of the stage of the disease, as most desperate cases often end in recovery.

EXSTROPHY OF THE BLADDER WITH OTHER CONGENITAL DEFECTS; MAYDL'S OPERATION.

ROSWELL PARK (*Med. News*, 1897, lxx, 702) reports the case of a boy four years of age who presented a case of exstrophy of the bladder with other congenital deviations, which seemed to make it worthy of a special report. The boy was well nourished and of strong frame in all respects save those noted. There was a deformity in the pubic arch of just two inches, the bone being replaced by fibrous tissue. The presenting area of the bladder was about the size of a silver dollar, both ureters presenting as papillæ, from which, even on coughing or sneezing, a little jet of urine was projected. At the upper margin of the mucous membrane was seen all that presented of the umbilicus, which appeared as a semilunar cicatrix. The penis was rudimentary and there was complete epispadias, a deep groove taking the place of the urethra. The right testicle was completely undescended and the left had remained in the inguinal canal. There was incontinence of fluid feces and a tendency to prolapse of the rectum, due to an exceedingly weak sphincter.

He saw no prospect, under the circumstances, for any successful plastic operation, and consequently determined to turn the ureters into the colon, as suggested by Maydl. This was done, chloroform being the anesthetic used. He first dissected away the rosette of mucous membrane around the ureters, leaving a small oval portion of the bladder wall and mucous membrane, which included the ureteral orifices. All this was done by careful dissection before opening the peritoneum; then protecting the parts by temporary compression of the ureters, he opened the peritoneum, and at once came upon what at first appeared to be the stomach, so thick were its walls, and so deceptive the appearance of its vessels. Further investigation showed this to be an enormously dilated colon, which lay almost in the middle line, and which extended straight up toward the sternum. Following it downward, it

narrowed to a very small compass, where it became continuous in the pelvis with what, by bimanual examination, proved to be the rectum. It was then seen that a marked congenital defect of the large bowel existed along with that of the bladder. Nevertheless, there was now nothing left to do but to proceed. Accordingly this dilated colon was opened at a suitable point and compression removed from the ureters, after which they were implanted in the colon and anchored, and the wound about them made tight by fine silk sutures. It was then impossible to cover the comparatively small abdominal wound by lateral approximation, so he closed it at a right angle to the ordinary line by silkworm-gut and kangaroo-tendon sutures, leaving still a raw surface over which the skin could not easily be drawn. Then, in order to close this, he extirpated the spongy tissues of the rudimentary penis and utilized the integument of its lower surface as a flap over the defect above, which it completely and nearly closed.

During the first twenty-four hours the boy did well, passed urine freely from the rectum and complained but little. During the second night his stomach became disturbed and on the following morning rejected everything. When fed by the rectum, it was found impossible to make the rectal pouch retain anything, because of the weakness of the sphincter, while to expose the opening between the rectum and the colon above, in order to pass the enemata higher, would have been impossible without chloroforming him and using a speculum. The result was that the boy died about fifty-five hours after the operation, during the last eight or ten of which apparently no urine was secreted, certainly not passed.

A hurried autopsy was permitted, which revealed the absence of any evidence of peritonitis, and showed the bowel condition to be about as outlined during the operation. The rectal pouch communicated by an opening, which would ordinarily admit a lead-pencil, with a large, thick-walled, and much distended colon, that extended toward the liver and had no splenic flexure.

ADHERENT PREPUCE AS A CAUSE OF CONVULSIONS IN CHILDREN.

J. HERBERT DAREY (*Med. News*, 1897, lxx, 635) said that during the past year he had met with three cases of stupor and convulsions in male children, to which no other cause could be assigned than the presence of a prepuce adherent to the glans penis. All of the patients were promptly relieved by operation. These cases impressed him with the importance of a careful and thorough examination of the prepuce and glans penis in all cases of convulsions occurring in male children, when all other possible causes of reflex irritation have been eliminated.

Case 1.—The patient, aged two years, had been under observation for a week or ten days, and during this time had been in a condition of stupor, from which he could be aroused only with difficulty, and into which he would immediately relapse after having been shaken. His head was normal in size, and no symptoms of brain pressure were present. The pupils were normal, and reacted readily to light. There was no trouble with his dentition. Micturition was very frequent. Anthelmintics and purgatives had been administered, with negative results. The foreskin at the meatus was red and irritated, and on passing a probe beneath it adhesions were found between its under surface and the glans.

The prepuce was divided and the adhesions separated, but as the former was not unduly elongated, circumcision was not performed. The wound was dressed with iodoform gauze soaked in carbolized oil, and the patient was put on drop doses of aconite, as his temperature varied from 102° to 104° F. The results were all that could be desired. The wound quickly healed, and in a few days he rallied from his condition of stupor, his temperature dropped to normal, and he has been well ever since.

Case 2.—He was ten months of age, and had had a great number of convulsions, which had been considered epileptic. The father of the patient had had epileptic convulsions when a child, but had been cured. No cause could be found for the convulsions in our patient except an adherent prepuce. Circumcision had been performed by another physician, but the convulsions continued. His condition was such that he could be controlled only by the free administration of chloroform. He was put on bromides, and a preparation of passiflora. He gradually improved, and is now strong and healthy, and has not had convulsions for some months.

Case 3.—This patient, aged two years and one month, was strong and healthy, and of good healthy parentage, there not being a trace of neurotic history in either parent. He had one severe convulsion last summer, which was attributed to an overloading of the stomach and bowels. On January 11, 1897, he was taken with a severe convulsion, which lasted upward of three-quarters of an hour. The same evening his temperature rose to 103° F., and it was only by the constant use of chloroform for a considerable period of time that he was kept from going into other convulsions. He received two grains of acetanilid and tincture of aconite in drop doses, every hour, to reduce his temperature, but, in spite of this treatment, his temperature steadily rose to 105° F. A wet pack speedily reduced his temperature a couple of degrees. It began to rise again rapidly, however, and he was extremely restless and nervous. He was now put in a tub of water at a temperature of about 90° F., gradually reducing the bath to 70° F., by the

addition of cold water. He was left in the bath until he began to shiver, and goose-flesh was well developed all over his body. He was then taken out, rubbed dry, and rolled up in flannel blankets. His temperature was reduced to 101° F., and he had a sound, refreshing sleep. The next day he was much quieter and free from nervousness, but toward night he became very restless again, and his temperature rose steadily, but not to such a high point as before. The bromides and aconite controlled the condition sufficiently, and it was not necessary to resort to the cold bath. Next day he began to grow worse again, and his penis was examined to find any source of irritation there. The prepuce was red and angry-looking, and on inserting a probe adhesions were found. The inner surface of the prepuce was universally adherent to the glans penis, and had to be dissected off, bit by bit. The wound healed nicely, and the patient began to improve rapidly and to gain flesh. He has had no return of anything approaching convulsions since.

A FATAL CASE OF SANTONIN POISONING IN AN INFANT OF ELEVEN MONTHS.

J. S. TAYLOR (*Med. Rec.* 1897, *li*, 637) reports that on the afternoon of March 20th he was called to see a baby suffering from "convulsions."

The infant was an unusually large, fat, healthy-looking boy of eleven months. Besides a promiscuous diet of bread, meat, soup, and potatoes (the baby showed especial predilection for the latter), the mother was in the habit of giving it a mixture of condensed milk and water, in the proportions of one to five, as her supply of breast milk was exhausted. There was a history of a convulsion accompanying indigestion six months before. With that exception the child had always been healthy. The present indisposition dated from two days before the first visit. The child had been fed freely on potatoes, and in the course of some hours became fretful, gave evidence of abdominal tenderness, and toward night had a convulsion. The mother administered santonin—"a little on the end of a teaspoon, ever so little"—and repeated it on the morning of the day of his visit, which was paid late in the afternoon. The child had a second convulsion after the first dose of santonin, but no more.

On examination he found great general abdominal tenderness, but rather more marked in the right iliac region, where there was distinct dulness on percussion. Lungs and heart normal. Respiration shallow and rapid; pulse full, tense, and slightly increased in rate; temperature normal. Patient unconscious. Slight icterus. Pupils normal. Convulsive movements of hands, arms and legs, and head on manipulation, especially on making slight pressure over the abdomen. The bowels had moved but twice from the santonin.

He prescribed a tepid bath every morning, absolute restriction to milk diet, and five powders one hour apart, containing each one grain of milk sugar and one-tenth grain of calomel. The stools induced by the mercurial during the night were three, and of spinach color instead of yellow, as the first ones were. The abdominal tenderness had disappeared, and there had been no more convulsions. It had fed eagerly from the bottle and taken sips of cool water when offered, but at other times lay in a profound stupor, with eyes tightly closed and hands gripped. The temperature was now $102^{\circ} + F.$, and the jaundice had increased somewhat, though it was not even yet conspicuous. There was profuse and constant flow of saliva from the mouth. The pulse had become rapid and weak, and the respirations continued shallow, labored, and rapid. On again examining the thorax, fontanelle, abdomen, limbs, pupils, nothing amiss could be discovered. In the evening the mother reported that while the amount of golden-yellow urine had been noticeably large up to the time of the morning's visit, the child had passed none since. It had sweated profusely all the morning, but the skin was now harsh and dry. He discovered slight puffiness of the eyelids. It no longer drank readily from the bottle, and lay perfectly still and showed no sign of consciousness when the mother changed the child's position from time to time as a prophylaxis against edema of the lungs. When a handkerchief wrung out in cold water was laid over the infant's head, it opened its eyes and cried for the first time in twenty-four hours. After copious sweating had been produced, he began the administration of minute doses of digitalis, acetate of ammonium, and acetate of potassium. No urine was passed, and on the morrow, March 23, at 8 A. M., the child died.

In the absence of any increase in the intracranial pressure as evidenced by the fontanelle, in the absence of vomiting, in the absence of bloody stools, serious cough, râles, dulness, and there being no paralysis in any limb, he made a diagnosis based on the following facts: History of incautious administration of santonin on two successive days, prolonged stupor, jaundice, increased flow of urine followed by suppression, profuse salivation, convulsive movements, elevation of temperature. In the three days of illness the child had lost no flesh, and, except for the icteric hue and the slight edema of face at the close, might have passed for a healthy infant.

ON ETHER-NARCOSIS IN CHILDREN.

Stoss (*Münch. Med. Wochenschr.*, 1896, *xlili*, 1322) said that since the work by Demme and Gerhardt in 1882 on anesthetics, no thorough study on ether-narcosis in children had appeared in German pediatric literature. Demme ex-

pressed his preference for chloroform, and his view is to-day generally accepted. A study, however, of deaths by chloroform teaches us that its use in children is by no means devoid of danger, and that the number of deaths in children due to chloroform narcosis is not small. The author's experience with ether-narcosis in children (200 cases) convinced him that even in the youngest child this anesthetic did not possess the disadvantages with which it was charged. The irritation produced on the mucuous membrane of the trachea and bronchi was slight. Narcosis can be induced in infants in two minutes, and in older children in from two to five minutes. The stage of excitation is not greater than with chloroform, and vomiting not more frequent. Sudden arrest of respiration with dangerous symptoms was never observed. The recovery from the influence of the anesthetic is more rapid than with chloroform, and the after effects are slighter. Infants usually take the breast or the bottle within a short time after awakening, without any tendency to vomit. Pneumonia and nephritis were never occasioned by the ether, and he recommended the substitution of ether for chloroform.



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HYSTERIA IN EARLY LIFE.*

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THROUGH the labors of the French school of neurologists in particular hysteria has been given the recognition it deserves as a distinct, fixed clinical entity, with a train of symptoms as characteristic as that of any of the acute specific infections or intoxications. That the disorder has a pathology of its own, I have no doubt the results of future investigation will demonstrate, but as yet we need more knowledge, especially in the domain of physiologic and pathologic chemistry, before we may hope for a solution of this aspect of the problem. From both inference and analogy it seems not unreasonable to believe that hysteria depends essentially upon metabolic or nutritional changes in the cellular elements of the central nervous system, in consequence of which there may result alterations in function and changes in relation whence arise the varied and protean symptoms of the developed disease. It may not be extravagant to hope that further refinement in staining methods, in which there has been so remarkable an advance in the past decade, may make possible the detection of changes in nerve-cells that at present elude closest scrutiny by existing means of investigation.

*Read before the Philadelphia County Medical Society, June 23, 1876.

Though we retain the name, which perpetuates the original erroneous conception of its pathology, we have learned that hysteria may exist not only in women deprived of their uteri, but even in men as well. Hysteria respects neither sex nor age, although by far more common in females than in males, and comparatively rare in early and in late life. The explanation of these differences must be looked for in the varying susceptibility and receptivity of the nervous system with regard to those influences to which in a general way we have learned to attribute etiologic activity. According to statistics cited by Lloyd in *A Text-Book of Nervous Diseases*, edited by Dercum, hysteria is most common in women at the age of twenty years. Briquet found one-fifth of the cases in the female sex to occur before puberty, and rather more than one-third between the ages of fifteen and twenty. Batault found the disease most frequent in men between the ages of ten and twenty. Mills, in the *Cyclopedia of the Diseases of Children*, edited by Keating, reports a case of catalepsy or automatism in a girl two years old, and refers to a similar case reported by Jacobi in a child three years old. He cites also a case of hysterical paralysis in a girl eighteen months old, reported by Gillette. The evidence goes to show that hysteria, while perhaps not so uncommon in childhood as it appears to be, is yet sufficiently so to warrant the report of a small group of cases illustrating some of the phases of the diseases as it appears in early life, as well as some of the difficulties and doubts that at times attend its recognition. The causes, symptoms, course and treatment of hysteria are much the same in children as in adults, except in so far as these are influenced by modifications dependent upon differences in mental and physical growth and development.

Case 1.—N. G., a schoolgirl, nine years old, presented herself in the clinical service of Dr. Morris J. Lewis, at the Orthopedic Hospital and Infirmary for Nervous Diseases, on April 21, 1897, with the statement that about a month previously she had been much frightened by being placed by her father, who was at the time intoxicated, in a room apart from the rest of the family. The child cried and complained of feeling sick. A few hours later, during the evening, while in bed but still awake, the right hand and arm began to tremble and soon the head likewise to shake. In the course of several hours more the

left hand also began to tremble. There was no convulsive movement and no loss of consciousness. The little patient now fell asleep and slept quietly through the night. On arising the next morning the movements returned, and, besides, there occurred in the lower extremities rapid movements resembling those made by a horse in trotting. In this attack it is said that consciousness was lost, the eyes being closed and the teeth gritted, but the tongue was not bitten. The attack lasted about five minutes and at its close the child was quite itself again, and was in nowise dull. In the course of the succeeding day some ten or twelve attacks of like character took place, but sleep was undisturbed during the night. On the following day the attacks were repeated with about the same frequency. In the next three weeks the number of attacks averaged fifteen a day, but after this it reached as high as thirty. In none had the tongue been bitten, but the mother maintains that consciousness was lost in all. Each attack was followed by headache. No attack was known to have occurred during sleep. For a week the gritting of the teeth had ceased. A number of attacks occurred at clinic, and presented the following features: While sitting the child suddenly began to droop her head, then to move it forward and backward. Next the right hand began to tremble, then the left. Finally the arms and legs also were set in active movement, as in the process of walking on all fours. Frothing at the mouth occurred. The eyes were closed and the child appeared unconscious. The attack terminated with clenching of the fists and tonic rigidity of the members. The mental state following was unobscured. In the intervals between attacks there was tremor of the right hand, which ceased with the onset of the attack, and also when the child's attention was diverted or engrossed as in conversation.

The child was well nourished and of good color. Gait and station were normal; the grasp of the hands was puerile; the knee-jerks were capricious. The action of the heart was rhythmic, its sounds clear. There was no obvious derangement of tactile or painful sensibility. In the family history the only points worthy of note are the occurrence of chorea in a cousin and of rheumatism in the mother's family. The patient herself had been born at term, had nursed at the breast for sixteen months and had been free from noteworthy illness and

from convulsions during early infancy. She began to walk at the age of fifteen months, and was rather late in speaking. At the age of two she suffered from measles, and at four from whooping-cough. Following the latter persistent internal strabismus had been noticed. Epistaxis had been frequent for four years, occurring mostly at night, but apparently being unattended with evil consequences. For a year the bleeding from the nose had been replaced by periodic headache, which was greatly relieved by the prescription of glasses correcting a high degree of hyperopia and astigmatism. There were no changes in the fields of vision. The child had suffered frequently from attacks of croup. She cried upon the slightest and even without any real provocation. She was directed to take ten drops of peppermint water, and the correction of the refractive error undertaken, and she was told that if she did not speedily improve she would be placed in the hospital. The attacks at once moderated in frequency and severity and the general condition was substantially improved.

There can, I think, be no doubt as to the hysterical nature of this case. Though lacking in some of the details of the complete clinical picture of hysteria, it yet presents so many distinctive features that mistake seems scarcely possible. The mode of onset, the character of the symptoms, the paroxysmal seizures, the emotional mobility and finally the results of treatment constitute such a grouping as is not encountered in any other disease. The loss of consciousness, whether merely apparent or real, while of course suggestive of epilepsy, cannot be held to exclude hysteria, as such true loss may, I believe, attend the latter as well as the former condition.

Case 2.—N. B., a girl, nine years old, came to the clinical service of Dr. Lewis at the Orthopedic Hospital and Infirmary for Nervous Diseases on April 14, 1897, with a history of going several times daily, for two years, through a series of peculiar movements which consisted essentially in dropping the arms and spreading out the hands as if to catch herself in the act of falling, without loss of consciousness. She had had, besides, three convulsive seizures in which she kicked vigorously, rolled up her eyes, etc., and in which it was thought that consciousness was lost. In some of the attacks urine was passed involuntarily, but the anal sphincter was continent and competent. In none was the tongue bitten. The child was ex-

ceedingly emotional, crying readily and being subject to attacks of causeless laughter. At times there was headache. The knee-jerks were preserved and station was steady. The dynamometric record was ten in each hand. There was no sensory derangement. The family history showed no evidence of neurotic predisposition. The little patient herself had never been seriously ill. Under date of June 21, 1897, it is noted that the onset of the attacks followed the eating of a quart of peanuts. At that time the child had a continuous series of convulsions for two days. At present it is said that the seizures are repeated at intervals of five minutes during the day, although but one occurred during the quarter of an hour that the girl was under observation, and in this, which lasted but a few seconds, the child doubled up in its mother's lap slightly and dropped its head forward; it might have fallen had it not been supported. The attacks take place not only in the presence of others, but also when the child is alone, and she has injured herself in several. They are superinduced by the ingestion of such articles of food as meat, cabbage, tea, coffee, etc. The child is exceedingly pallid; its digestion is poor, and its bowels constipated. Pin-prick is everywhere readily appreciated. The heart is said to beat rapidly at the close of the attacks, but auscultation fails to disclose evidence of organic disease. Dr. A. G. Thomson was unable to detect any abnormality of fundus or of muscular balance. Hypnosis was attempted, but apparently without success.

While some of the features of this case are strongly suggestive of hysteria, others are not less strongly suggestive of epilepsy, and without further study the discrimination is by no means easy. I admit that the criticism may be justly made that the doubt surrounding the diagnosis should be sufficient to exclude the case from this report, but if there is no other justification for its inclusion, I may be permitted to retain it in order to emphasize the difficulty with which the differentiation of the two diseases is sometimes attended, and to dwell briefly upon the fact that the same patient may be the victim of both.

This difficulty in diagnosis, and especially as it occurs in children, is illustrated by a case that came under observation only to-day in the clinical service of Dr. Lewis at the Orthopedic Hospital.

Case 3.—A nervous mother brought her little daughter of seven to learn what was the matter with her. The child was pale and ill nourished, but had no definite complaint. She had fallen about a month ago, striking her nose and suffering a copious epistaxis, which had been repeated some three weeks later. About two weeks ago the child was seized with severe headache, followed by high fever and delirium, continuing for two or three days. After the lapse of a week these symptoms reappeared, lasting now, however, only throughout the night. Inquiry elicited the fact that two years ago the child had suffered from "congestion of the liver," in the sequence of which she was unable to walk for a period of some weeks. Gradually, with careful training, the power of locomotion returned. There had never been a convulsion or loss of consciousness and there was no undue laughter or weeping. Needle-prick on the right hand was less readily appreciated than upon the left; and the point of the needle was said to be felt upon the right side of the face as a piece of hot iron. Some doubt may be felt as to the results of this sensory examination, inasmuch as the responses of the child appeared to be influenced by the tendency of the questions. However this may be, the girl submitted bravely to painful impressions capable of causing an older person to wince. The knee-jerks were preserved; the gait was normal, the heart was rather overacting, though entirely rhythmic, and its sounds were clear. Hypnotism was attempted and appeared successful. At one time in the course of this procedure the child, when directed by her mother to open her eyes, maintained that she was unable to do so. I have ventured to stamp this case with a diagnosis of hysteria, though fully alive as to its vulnerability and the possibility of deception on the part of both patient and clinician.

Case 4.—S. H., 11 years old, was brought to the clinical service of Dr. Louis Brinton, at Howard Hospital, by her mother, a music teacher, having two other children, and herself profoundly neurasthenic, with the statement that the child was suffering from spinal trouble, which manifested itself by the appearance of a swelling at the back of the neck. The mother related that she had suffered similarly during her pregnancy with this child, and this condition in her was attributed to "falling of the womb." Both mother and child suffered

from time to time from sick headache, with nausea and vomiting. The general condition of the little patient was stated to be sometimes better and sometimes worse. She was said to be quick-tempered and self-willed, and she cried and screamed at times, particularly if not permitted to have her own way, although there had never been a convulsion or loss of consciousness. At times also there was undue laughter. For various reasons, but especially on account of her emotional mobility, the child had not attended school regularly. Her appetite was described as ravenous; the bowels were regular and digestion was good. When headache and nervousness were especially marked, the child vomited repeatedly, but improvement ensued in the course of some hours, following the taking of food. Sleep was variable, although as a rule it was good. The knee-jerks were preserved and common, and painful sensibility appeared to be intact. The pupils were full, equal, regular and reactive to light. The action of the heart was rhythmic, its sounds clear. Hypnosis was attempted on two occasions but without success.

I look upon this case as one of hysteria, somewhat ill-defined though it be. While it presents none of the obtrusive stigmata of that disease, it is possible that time and further observation may lead to the detection of some one or another of the more characteristic phenomena. The intimate character of a disease is to be learned from a study of its anomalous as well as its more typical forms. Neurotic parents are capable of exerting a deleterious influence upon their offspring, both through heredity and association.

Case 5.—L. S., a colored girl, fourteen years old, complained of pain and soreness in the region of the stomach, which proved to be sensitive to touch. She was unable to skip and jump and play like other children on account of the resulting distress. She suffered from nausea occasionally, unattended however with vomiting. There was complaint of a good deal of headache, although correcting glasses were worn. There were present also tic-like movements of the eyelids. The appetite was good, the tongue coated, the bowels constipated. Menstruation had appeared for the first time some nine months previously, and although a little irregular, was unattended with pain. During the preceding month there had been suppression of urine for three or four days on two or

three occasions. The urine itself was said to be clear and yellow. For two years the girl was subject to what were described as faints, in which she did not fall, though she seemed to lose consciousness. In these she clenched her fists, and on one or two occasions she kicked, but she had no well-defined convulsions. The duration of the attacks was said to range from five to thirty minutes. At the conclusion of the attack the child seemed exhausted and she felt drowsy. There was at no time undue laughter or causeless weeping. The attacks recurred two or three times a week at intervals of two or three weeks. There had been a free interval of as long as three months. No definite cause could be assigned for the attacks, though they were associated in the mind of the mother with the function of menstruation, to which however their frequency bore no apparent relation. Nothing also was known that seemed to be capable of inhibiting or aborting the attacks. The child did fairly well at school, although apparently without ambition. There was no history of similar disease or of other form of nervous disorder in the family. The child had never suffered from any serious illness. She was considered sensitive. The knee-jerks were preserved, the patient jumping when the patellar tendon was struck, and also in anticipation of a blow that was threatened but not struck. There was no gross sensory derangement. The heart displayed no abnormality. Dr. C. Y. White, by whom the patient was referred to Dr. Brinton's clinic at Howard Hospital, informed me that the patient was susceptible to hypnotism, but her failure to return prevented further study of the case.

Although I believe this case to be one of hysteria, it would appear to be the part of wisdom to withhold for the present a final diagnosis, in order that further study, and perhaps personal observation of one of the attacks, may yield evidence of such a character as will permit of an unequivocal and unreserved conclusion.

Case 6.—R. F., a schoolgirl, fourteen years old, applied at the Orthopedic Hospital and Infirmary for Nervous Diseases, in the clinical service of Dr. S. Weir Mitchell, on July 3, 1896, with a history of having been frightened some eight months before by masqueraders. She fell to the ground and was unconscious for three hours. Her jaws were locked and she breathed heavily. After consciousness returned she went to

sleep and she remained in bed for several days on account of weakness. Some two months later, following a recitation, the girl lay down and became unconscious and exhibited occasional twitches of the muscles. This attack lasted for three or four hours, and again several days were spent in bed. A third attack occurred after an interval of three months, without known cause. In this also the girl lay down, appeared unconscious, with her eyes open, and became rigid, but she did not bite her tongue. This attack continued for four or five days, during which the patient regained consciousness at times for periods of fifteen minutes. At other times she appeared as if dead, being unable to see or talk. She took a little food, both liquid and solid. At the time of application the attacks recurred almost weekly, lasting for three or four days at a time. The seizures were characterized by rigidity rather than active movement. After some of the earlier attacks there was inability to see, walk or talk. In some of the attacks the patient scratched herself, in some she pulled her hair, in some she kicked at those about her and in some she made attempts to bite. In some she groaned a good deal, and in others the rectal and vesical contents were passed incontinently. Some of the attacks had occurred while the patient was alone and some at night in bed. Between the attacks she was often dull, despondent and uneasy. At times, and especially following the attacks, she cried freely and at times she laughed unduly. At times, further, she was unusually obstinate. Appetite, digestion and sleep were good and the bowels were regular. The knee-jerks were preserved and the pupils were full, equal, regular and reactive to light. There appeared to be general diminution of sensibility to pin-prick. Of the family history it need only be said that the mother, fifty-three years old, was a nervous invalid. The patient herself had had measles and whooping-cough in childhood, and from time to time suffered from bilious attacks. Menstruation appeared first at the age of thirteen and was irregular and painful. In the inter-menstrual periods pain and swelling over the left ovarian region were complained of. Prior to the present illness there had never been a convulsion.

The hysterical nature of this case appears so obvious that further comment seems uncalled for.

Case 7.—M. M., a schoolgirl, fourteen years old, applied at the Orthopedic Hospital and Infirmary for Nervous Diseases, on September 14, 1896, in the clinical service of Dr. Wharton Sinkler, on account of a coarse, rapid tremor of the right upper extremity, most pronounced in the hand, which had made its first appearance, without known cause, a month before, ceasing after a week and being resumed after an interval of three weeks. The movement was least marked during rest and appeared to be increased on voluntary movement. It ceased during sleep. No derangement of sensibility and no limitation of the visual fields could be made out on superficial testing. The dynamometric record was 6 on the right and 23 on the left. The knee-jerks were feeble. The mother of the child was distinctly neurotic. The patient herself had had four attacks of chorea, two involving the right side and two the left, the first at the age of six years and the last at the age of nine.

Under date of June 21, 1897, it is noted that the tremor has disappeared and reappeared thrice since the previous record. Both the girl and her mother consider her well at present, although on investigation it is found that the right hand is tremulous when extended, and inquiry reveals the fact that the shaking appears on excitement or after muscular activity, but only, or at least only in marked degree, in the right hand. There was no impairment of painful sensibility.

This case illustrates one of the forms of motor disturbance that may attend hysteria. In addition to simple tremor there may be choreoid or tic-like movements, or spasm or convulsion, or paralysis or paresis.

Case 8.—In conclusion I wish to refer briefly to a rather remarkable case, in a girl of sixteen and a half years, in whom hysterical manifestations had been present for three years or more. The patient's mother was distinctly neurotic and the father suffered probably from some organic disorder of the brain. At the age of thirteen, after some opposition, the girl fell to the ground and became rigid and blue and so remained for perhaps half an hour. Subsequently she wept. In the following year she felt certain vague sensations, with perhaps some perversion of consciousness, after witnessing an accident in the laundry in which she was at the time employed. Some months later she was found wandering about at a distance of

some six miles from home and another month later at a distance of eighteen miles or more. Menstruation set in shortly after this last escapade and recurred irregularly, with pain. At about this time the girl began to have staring attacks, which were attended with convulsive movements. In the following year she did fairly well, but at the end of this time she again walked away from home, a distance of eighteen miles. About a month afterward, in connection with some sort of seizure from which her father suffered, the girl slept for four days, taking only liquid but no solid food. About four months later she went irresponsibly to Washington, D. C., and passed through a varied experience. Of the details of these several expeditions, the girl maintained she had little or no knowledge and only faint and ill-defined recollection. She was readily susceptible to hypnotism and while somnolent numerous facts and incidents connected with the journey to Washington and her sojourn there for several days were elicited. There was diminished sensibility to pin-prick upon face, hands and legs in irregular distribution. The pharyngeal reflex was preserved. From recent information I learn that the girl was a short time ago found under suspicious circumstances in a not entirely reputable neighborhood and she has been since sent to a reformatory institution. At the time the patient was under my observation I could not convince myself of the entire reliability of her statements, and I am yet unable to decide to what extent she endeavored to practise simulation or deception. I was and am still inclined to believe that many of the symptoms have an hysterical basis and I would loth deny that the several escapades were manifestations of a form of modified consciousness. In addition to the nervous disease in her own immediate family, the fact that an aunt is a mesmerist and has exercised some influence over the patient is not without interest.

I have in this communication endeavored by the report of cases to supplement what others have already done in directing general professional attention to the liability of children to suffer from hysteria, and I would further emphasize the importance of its early recognition and intelligent treatment. I wish to reiterate the fact that hysteria may occur in either sex at any time of life. The disorder is not rarely associated with other disease of the nervous system, the existence of which would seem to predispose to the development of hysteria rather than to exclude the likelihood of its coexistence.

My thanks are due Drs. Mitchell, Sinkler, Lewis, and Brinton for their kindness in permitting me to make use of their cases.

MALFORMATION OF HEART—TRANSPOSITION OF AORTA AND PULMONARY ARTERY.

By H. D. ROLLESTON, M.D., CANTAB.,
F.R.C. S., London.

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THE following case of congenital malformation of the heart is interesting not only for the marked changes found, but from the fact that there were no symptoms during the life of this premature child.

The case occurred in the practice of Dr. G. H. Harnes, of Hertford street, Mayfair W., to whose kindness I am indebted for the opportunity of examining the body after death. The parents were healthy and had not suffered from rheumatism, but the mother was said to be "gouty." The child was a female, and was the first child. Owing to the mother having a contracted pelvis, labor was induced at seven and a half months of pregnancy, and forceps had to be used. The child weighed six pounds, cried naturally, and appeared healthy and well nourished. There was no cyanosis, except directly after birth—which at the time was thought to be possibly connected with the fact that the mother was under the influence of chloroform—no clubbing of the fingers, and congenital heart disease was not suspected. The child being premature, was kept in an incubator, took its food well, and except for a little restlessness on the two nights preceding its death, presented no symptom of illness. When exactly two weeks old the child was noticed by the nurse to appear somewhat blue, and shortly afterwards quietly ceased to breathe.

The child was noticed to become discolored shortly after death. I performed the autopsy thirteen hours after death. There was considerable lividity of the skin. Rigor mortis was passing off. There was a fair amount of subcutaneous fat and the body was well nourished.

On opening the thorax the pericardium was at once seen to be much increased in size; this was not due to any effusion, but to the heart, which, and more especially the right side, was enormously enlarged.

After being opened and washed for two days in running water, and put into spirit the heart weighed 24.5 grammes (six

drams), according to Macalister* the weight at birth is 25. grammes, so that in this case—which may be considered as an eighth months' fetus—there was an increase in the weight of the heart.

The apex of the heart pointed to the left. The superior and inferior vena cava opened normally into the right auricle, which was greatly dilated and full of post-mortem bloodclot. The foramen ovale was almost but not quite closed, there were two foramina on the fossa ovalis, both at the anterior margin, one at the upper angle, the other at the lower, and in addition there was some little fenestration of the anterior part of the fossa.

The segments of the tricuspid valve showed small translucent nodules—albinis bodies which are of no importance pathologically—they are composed of connective tissue, and according to Bernays are the remains of fetal valvular nodules.

The right ventricle was dilated and hypertrophied. The septum ventriculorum was patent near the top. In order more definitely to localize the position of this deficiency, it maybe well to refer briefly to the parts composing the septum. Moussoust† gives its development at length, and from this study it is seen that the ventricular system is composed of (a), a posterior portion, (b), an anterior portion, and (c), an intermediate part or *pars membranacea*, or the undefended space. The anterior part of the septum has been again divided by Rokitsansky into two, an anterior portion which was intact in this specimen, and a posterior portion which was deficient in this heart. This communication then between the two ventricles was at the top of the septum, just in front of the undefended space; it lay below and was covered by the septal curtain of the tricuspid valve. Three-quarters of the partial malformation of the ventricular septum are due to absence of the posterior portion of the anterior part of the septum.‡

Arising from the anterior surface of the right ventricle to the left of the infundibulum, and on a lower level, was the aorta with the two coronary arteries arising from its sinuses of valsalva. The valves were quite healthy and the innominate, left carotid and subclavian arteries cross normally from the

* A Text Book of Human Anatomy, p. 319.

† *Maladies Congenitales du Cœur*. G. Masson, Paris, 1895, p. 29.

‡ *Ibid.*, p. 52.

arch of the aorta. The origin of the aorta was in front of the origin of the pulmonary artery, and the arch passed normally to the left.

The aorta was not dilated, but at the junction of the ductus arteriosus with it there was some narrowing of its lumen. The lumen of the ductus arteriosus was almost obliterated.

The infundibulum of the right ventricle lay to the right of the pulmonary artery, and projecting above the root of the outline of the ventricle ended in a cul de sac. Moussous* refers to this anomaly as occurring in cases of transposition of the aorta and pulmonary artery.

The left auricle was empty; the pulmonary veins opened normally into it. The mitral valve was healthy. The auriculo-ventricular valve corresponded in every way to the mitral valve.

The left ventricle was hypertrophied; it gave off the pulmonary artery, which was somewhat dilated and supplied the lungs. The pulmonary valves were healthy. There were no coronary arteries taking origin from the sinuses behind these valves. The walls of the two ventricles were about equal in thickness.

The lungs were crepitant, pieces of them floated in water, and there was no atelectasis. The bronchi and larynx were normal.

The bronchial glands, the thymus, and the thyroid were healthy. The trachial glands were prominent and somewhat enlarged.

The liver—of a dark purple color—was in its normal position, and the other abdominal viscera presented nothing abnormal. There were about 6 ounces of yellow serous fluid in the peritoneum.

REMARKS.

Thus, as is said to be more often the case, the transposition of the aorta and pulmonary artery was not accompanied by any corresponding transposition of the great veins or of any of the abdominal viscera.†

The foramen ovale and the ductus arteriosus were almost closed, so that the only way by which arterial blood could pass

* Ibid., p. 31

† Carpenter, *Congenital Affections of the Heart*, p. 36. John Bale & Son, London, 1894.

from the left ventricle into the right ventricle and so into the aortic system was the small patency in the left septum.

The walls of the two ventricles being, as is normally the case at birth, of equal thickness, the blood pressure may have been equal in the two cavities and the interchange of blood between the two ventricles but slight.

This malformation therefore tends to divide the circulation into two parts:

(I.) The circulation of blood in connection with the right side of the heart. The blood brought by the superior and inferior vena cava would pass into the right ventricle, then into the aorta, and after traversing the different parts of the body would have been returned to the right auricle by the vena cava.

(II.) The circulation of blood through the left side of the heart and the lungs. Starting with the pulmonary veins the blood would traverse the left auricle and ventricle, the pulmonary artery and veins, and thus return again to the left auricle.

Such a condition would, if complete, of course, be incompatible with life. So long as oxygenated blood was able to pass by way of the patency in the septum, the foramen ovale, and the ductus arteriosus, into the aortic system life was maintained. But as the closure of the foramen ovale and ductus arteriosus progressed the blood in the aortic system must have become progressively more venous. The consideration that the child was premature, being at the time of death an eight months' child, and so required less oxygen than an older one would do, and the fact that it was kept in an incubator, which diminished the amount of heat given off by it and so presumably the amount it had to produce, perhaps offered some explanation of the absence of cyanosis. Carpenter* remarks in this connection that complete absence of cyanosis until the very last is a feature commonly observed in cardiac malformation.

There was no sign of fatal endocarditis, and the condition is therefore better described as a malformation than as congenital morbus cordis.

It is a developmental error, and not, as far as we can see, due to fetal endocarditis or morbid lesion.

* Pediatrics, Feb. 15, 1897, p. 153.

Dr. Peacock* says "the production of this form of malformation is to be ascribed, as is well explained by Dr. R. Quain, to the irregular division of the bulbus arteriosus, so that the bronchial arches ordinarily associated with the portion of the bulb which forms the pulmonary artery become connected with the aorta; while the arches which should be associated with the portion of the bulb which becomes the aorta are in connection with the pulmonary artery."

This does not appear to explain why the coronary arteries should come off from the right side as they did in this case, and as they are figured as arising in a plate taken from Rokitsanski in a recent edition of Ziegler's pathology.

The most satisfactory explanation of transposition of the arterial trunks is that it is due to an anomaly in the direction of the septum, which divides the primitive bulb into the aorta and pulmonary artery. Moussoust clearly shows how changes in the direction of the arterial septum can lead not only to the aorta arising from the right ventricle, and the pulmonary artery from the left ventricle, but also to imperfection of the posterior portion of the anterior part of the ventricular septum, dilatation of the pulmonary artery and a rudimentary condition of the infundibulum, conditions all present in this specimen.

PURULENT OPHTHALMIA.

By S. R. McKELVEY, M.D.,
Spencer, Indiana.

THE theory maintaining that a common virus excites constitutional syphilis, gonorrhea and local contagious ulcers has been abandoned since Benjamin Bell and Ricord demonstrated gonorrhea to be distinct from syphilis. Gonorrhea or purulent urethritis in man is generally conceded to be due to a special micro-organism, called by Neisser, its discoverer, the gonococcus. Whether the theory of the gonococcus is positively proven or not, it is sufficient here to state that the specific virus or gonococcus causing purulent urethri-

* On Malformations of the Human Heart. John Churchill, London. 1858, p. 116.

† Ibid, p. 133.

tis in man is the same micro-organism that causes purulent ophthalmia.

Dunglison tells us that a purulent disease is one in which there is more or less discharge of pus, and we are therefore reminded that we have muco-purulent or pus-discharging disease of the conjunctiva known as muco-purulent conjunctivitis or epidemic conjunctivitis, which is also due to a specific cause differing from the gonococcus. In this form of conjunctivitis we have a redness and swelling of the conjunctiva, accompanied by a secretion which contains numerous pus corpuscles mixed with mucus. There is more or less lachrymation and puffiness of the lids. It is very contagious, is not inclined to affect the cornea and runs a natural course in from ten days to six weeks. Traumatic ophthalmia and mild forms of purulent ophthalmia are often classified as muco-purulent, and in the beginning, and even for many days, it is very difficult, if not impossible, to be certain whether we have a simple muco-purulent ophthalmia or a genuine purulent ophthalmia due to the gonococcus. There is also a rheumatoid form of conjunctivitis which may at times puzzle the physician.

In the newborn purulent ophthalmia receives the name of ophthalmia neonatorum and manifests itself in from two to three days after birth. Purulent ophthalmia is one of the severest forms of conjunctivitis, the period of incubation being about thirty-six to forty-eight hours, and the disease usually runs a long and tedious course. It frequently affects the cornea, and may cause its destruction, together with loss of aqueous humor and lens and total loss of vision. In ophthalmia neonatorum, the parents notice the lids are slightly swollen, somewhat red, glued together in the morning, and when the lids are separated there is discharged a rather thick purulent secretion. There seems to be but little pain at the onset, but as the disease advances the lids become much swollen, the purulent discharge becomes more plentiful and thinner and the child is restless, seeming to suffer pain. Secretion gradually becomes less in quantity, the lids become of normal thickness, the conjunctiva returns to a normal condition, and if the cornea has not been injured the normal state is regained. There may, if the cornea is injured, be simply a haziness of the cornea, or when it is destroyed, the aqueous humor is lost,

the ball shrinks and vision is lost. In the adult, after the inception of the contagious principle, slight irritation referable to the conjunctiva and redness of the membrane are noticed by the patients. Lachrymation and mucoid secretion follow in about twenty-four hours. At the end of about forty-eight hours photophobic swelling of the lids, hypertrophy of the conjunctiva and a purulent secretion are present. The height of inflammatory action is generally reached from the third to the fifth day, the amount of secretion is very great, and well-pronounced hypertrophy of the lids and conjunctiva is present. The secretion escapes and runs down the cheeks in thin yellowish masses in a typical case. Destruction of the cornea may take place here in the same manner and with the same results as in ophthalmia neonatorum, but the disease is usually more rapid in its action. There is always pain, depending more or less upon the severity of the case. Total destruction of the cornea with complete loss of vision is said to occur in about one-third of all cases where treatment is not begun in an early stage of the disease and not carefully and judiciously carried out. The treatment of this disease is prophylactic and curative. In the newborn, prophylaxis consists in the thorough cleansing of the eye of the infant at birth with weak solutions of boric acid, nitrate of silver or mercury. The cleansing process seems to have reduced the disease to a relatively small percentage where it has been practiced in hospitals. In the adult the prophylaxis consists in trying to prevent the disease from being conveyed from one eye to the other. Of course, every thoughtful physician will caution his gonorrheal patients as to the danger of getting the urethral discharge into the eyes.

I have treated some cases by hermetically sealing the well eye, and some without. In most cases I seal up the well eye as a matter of policy, as there will at least be no harm done, but for numerous reasons I have but little faith in this method. The treatment when once begun is simple, but must be persistent. During the acute stage cold applications will afford the most comfort, but later I would use warm water for cleansing purposes.

In my experience the most suitable instrument for cleansing is a small soft rubber-bulb syringe. The nurse should be taught to lift the lids by grasping the lashes, and by the aid of

the syringe the cleansing wash may be thrown back to the very bottom of the sac and every particle of pus removed. Immediately following the cleansing process, the remedy in solution can be applied also by the syringe. A weak solution of nitrate of silver may be employed, and sometimes, after the acute stage, the lids may be painted with a solution of nitrate of silver, 20 grains to the ounce, once a week. In most cases a 2 or 3 per cent. solution of boric acid can be freely used, and with perhaps as good results as any other remedy. Should ulceration of the cornea occur, atropine may be used with advantage. If there is much pain, use cocaine. Careful nursing and cleanliness will perhaps do as much or more than any medication.

INFANTILE DIARRHEA.

By STANLEY M. WARD, M.D.,
Hampton, N. H.

UNLESS there be some positive contra-indication, it is good practice to administer, early in the treatment of the case, a laxative, either small doses of calomel or dram doses of castor oil, laxol, etc. After free evacuation of the bowels, if the case be one of simple diarrhea, in which the stools contain neither blood nor mucus, I give to a child ten to twenty months old, one of the following powders every three or four hours;

℞ Bismuth salicylat., 3 i
Pulv. ipecac. et opii, gr. x
Pulv. aromat. ʒ i
Mix. Ft. chart. No. xii (12) div.

When the stools are "jelly-like," containing little fecal matter and much mucus and blood, I give with almost invariable success fifteen to twenty drops of the following:

℞ Hydrarg. bichloridi, gr. ¼
Liq. potas. arsenitis, gtt xxxii
Syrupi rhei,
Syrupi rubi, aa 3 ii
Listerine q.s. ad ʒ ii

Mix. Sig.—Fifteen to twenty drops every one or two hours. If there is much pain, add one-half dram of deodorized tincture of opium to this mixture.

EDITORIAL.

GASTRO-INTESTINAL HEMORRHAGE IN THE NEW-BORN, AND THE FRENCH METHODS OF TREATMENT.

GASTRO-INTESTINAL hemorrhages in the new-born, that is to say, within fifteen to twenty days after birth, are of rare occurrence, but in this country have scarcely received the attention their gravity deserves. The importance of these attacks is so considerable and the disorders they may bring in their train are of so grave a nature, that it behooves a physician to give the subject at least a certain amount of study, so that he may know how to act when he finds himself in the presence of an accident of this kind. Much of the current literature bearing on the subject has been contributed by Frenchmen, who are always well to the front, both in investigating and treating diseases of children. As is well known melena in infants is often spurious and not in any way symptomatic of an organic change in the digestive tract, but is simply caused by blood swallowed by the infant, and then discharged either by the mouth or rectum. In a case of melena proper, symptoms vary with the quantity of blood lost. If the hemorrhage is scanty, general symptoms are lacking; on the other hand the phenomena usual with large losses of blood are present, except that fall of temperature does not always exist. Melena neonatorum occurs in the majority of cases within from three to ten days of birth, more often within three. The cause of many of these hemorrhages is obscure; occasionally ulcers of the stomach or duodenum have been found, but in most instances the hemorrhage has been capillary, and nothing but a congested state of the vessels has been discovered. Grandier and Ritter have given as a probable cause a condition allied to hemophilia.

The late J. Lewis Smith quotes Vogel, who believed that the closing of the umbilical vein was the cause of congestion. The prognosis naturally must depend on the frequency and abundance of the bleeding, and the causes when these can be diagnosed. In 1890, Dusser reported a mortality of 55 per cent. In 1893, Oni attended 87 cases, of which number 51.6 per cent. died. In 34 cases that came under Hermary's notice the mortality was 51.4 per cent., whilst Minot, of Boston, puts the ratio of fatal results at 86 per cent. However, in estimating the rate of mortality from gastro-intestinal hemorrhage, the number of infants who die from the direct effects must not be only considered, there are many who do not succumb at once, but who never really recover from these accidents in their early years. Fortunately, cases of melena proper are few and far between. According to Bahl and Hecker, 8 cases occur in 4,000. Spiegelberg says, 2 in 5,000 and Genrich, 1 in 2,800. In treating infants suffering from melena proper, no nourishment must be given that has a tendency to congest, the suckling at the breast should be prohibited, the feeding should be effected with a spoon, containing either mother's or goat's milk diluted with iced barley water. The skin should be rubbed to arouse circulation, and above all the respiratory movements of the infant should be left perfectly free. The application of heat is beneficial. The French pin their faith to the use of the "couveuse," and their physicians have tested this method with the most encouraging results. The "couveuse" was first invented by Dr. Farnier, and in 1893 improved upon by Dr. Lyon, of Nice, and may be described briefly as a woven wire mattress suspended in a glass case, the latter being heated by a water coil, and kept sweet and wholesome by a constant inflow of purified filtered air. The infant, wrapped in cotton wool, is placed in this receptacle, heated at a temperature of from 35° to 37° Centigrade, and is kept there until convalescence is established. When the "couveuse" is not obtainable, Loranchet advocates envelop-

ing the infant in warm cotton wool. Hermary strongly recommends friction with alcohol. Opinions differ as to the effectiveness of medicine administered internally. Hermary advises perchloride of iron, Eustace Smith suggests gallic acid, extract of kameia, or oil of turpentine in mucilage. Oni, on the contrary, deprecates the internal use of medicine, on the grounds that the stomach, before everything, requires rest, and prefers subcutaneous injections of ergotine. When the anemia is severe, Lutin, Hutinel, and Weiss advise injections of a weak solution of chloride of sodium; inhalations of oxygen when possible, artificial respiration and injections of ether are often of benefit. After the bleeding has been finally arrested, the infant will need careful overlooking for some time, and if syphilis has been diagnosed as the cause, mercurial treatment should be commenced without further delay.

ALCOHOLISM IN NURSING MOTHERS.

A CASE was narrated a short time ago in the *Bulletin de l'Academie Medicine* of an infant that suffered from grave symptoms through alcoholic indulgence on the part of the wet nurse. This nurse doubtless thought that by indulging freely in alcoholic stimulants, that she was not only giving pleasure to herself, but at the same time doing her duty by the baby. The belief is still widespread, that a generous allowance of alcohol is necessary for the production of breast milk in sufficient quantity and quality. The superstition has been handed down from generation to generation, and is hard to kill. It is superfluous to say that it is quite an erroneous one; certainly, nursing mothers should partake of a liberal diet, but stimulants are not a necessary part of it. In some cases, perhaps, the use of alcohol in moderate quantities is indicated, but as a rule it is unnecessary as well as harmful. If the milk is not so plentiful as it should be, the mother should eat plenty of farinaceous food and good butcher's meat, and drink cows' milk.

SOCIETY REPORT.

THE SECTION ON DISEASES OF CHILDREN OF THE AMERICAN MEDICAL ASSOCIATION.

Meeting at Philadelphia, June 1 to 4, 1897.

The Section was opened with the address of the chairman, Dr. John A. Larrabee, of Louisville, Ky. This address was largely a history of the Section.

A letter written by Dr. A. Jacobi, organizer of the Section and its first chairman, was read, in which it was stated that the Section was not founded, but was in the air—a "spontaneous generation." It was the sixth Section formed in the history of the Association. Mention was made of the rapid strides in pediatrics, its establishment as a specialty, and its separation from the Chair of Obstetrics in our medical colleges. Scarcity of pediatric literature was until lately to be deplored, but this can no longer be urged. A suggestion was made that a censorship be created over medical literature because of the large number of papers now unnecessarily presented.

Antiseptic versus the Antitoxic Treatment of Diphtheria.—The first paper read before the Section was contributed by Dr. O. W. BRAYMER, of Camden, N. J. The author stated that antitoxin, in his opinion, does not deserve the reputation it has acquired. He advocated local antiseptic treatment, and quoted statistics of cases occurring in his practice in which chlorate of potash and iron had been used with gratifying results.

The Treatment of Diphtheria was the title of a paper by Dr. JOHN H. COUGHLIN, of New York, in which he said that a better understanding of the action of old remedies is more to be desired than constant experimentation with new ones. In the treatment of diphtheria it is very essential to keep up the nutrition. Nourishment should be given in small quantities, and often. Large quantities of alcohol should never be given to children, for aside from the catarrhal condition of the gastro-intestinal tract that ensues from such ingestion, the eliminative organs become overworked.

The Serum Therapy of Diphtheria was the title of a paper contributed by Dr. EDWIN KLEBS, of Chicago, in which it was stated that the author had arrived at the conclusion that both antitoxic and bactericidal properties were inherent in the serum, and that both worked to produce a cure; they are not products formed in immunized animals, but are transformed from injected culture fluid.

The Specific Use of Diphtheria Antitoxin in Laryngeal Diphtheria.—Dr. EDWIN ROSENTHAL, of Philadelphia, read a paper on the above.

The Therapeutics of Diphtheria, with Special Reference to Antitoxin, was the title of a paper read by Dr. W. W. GRAY, of Bridgeport, Conn.

These papers were then discussed jointly.

Dr. F. A. PACKARD, of Philadelphia, opened the discussion, in which he said that when asked to open the debate on the antitoxin treatment of diphtheria, he replied that he thought it would hardly be worth while to discuss it with any man who could not discover enough in the published statistics to convince him. He admitted that statistics and figures could lie, but the greater the statistics the more accurate they were. He would like some one to explain the experience of Baginsky and Rohé. Their mortality increased markedly when their supply of antitoxin was exhausted, and when they obtained a supply the mortality percentage rapidly decreased. Quite a percentage of fatal results had occurred after the prophylactic use of antitoxin. The death of the child of Professor Langerhans occurred after a prophylactic dose of antitoxin. It was a question in his mind whether physicians had a right to use prophylactic doses of antitoxin in healthy people. He believes we should treat every throat exposed to diphtheria by antiseptic washes to remove the Klebs-Löffler bacilli collected there.

Dr. W. P. NORTHRUP, of New York city, said that in the New York Infant Asylum an epidemic of diphtheria was stopped by prophylactic injections of small doses of the serum. There were no deaths among the adults; there were plenty of deaths among the children. There were no accidents from the injections.

Relative to collective investigation, the Pediatric Society sought to place a crucial test upon the value of the antitoxin treatment of diphtheria. In order to have a test we must first have a control. As we look back on the records of intubation we conclude that the statistics of intubation are sufficient to act as a control. Sixty thousand circulars were sent out, from which nineteen hundred returns were received, seventeen hundred of which could be used, and of this number there were six hundred and sixty-eight intubated cases of laryngeal diphtheria. In pre-antitoxin days if we got twenty-seven per cent. of recoveries it was about the best we could do. These six hundred and sixty-eight cases represented a clear type of the disease from all over the country, so that there was no chance to "cook" the returns and very little opportunity for accidents. In the control cases there were twenty-seven recoveries in one hundred, and in the last report of six hundred and sixty-eight

cases there were twenty-seven deaths in one hundred. Upon these figures the speaker based his reasons for urging the members of the Section to adopt antitoxin for the treatment of diphtheria.

As to the dosage of antitoxin we should inject not less than 2,000 units, and this dose should be repeated in 18 hours if there is no manifest improvement, and again in 24 hours if no further improvement takes place.

Dr. LOUIS FISCHER, of New York, said that last summer, while going through the Children's Hospital, Professor Baginsky told him he had no more dread of diphtheria since he was using antitoxin than he had years ago from simple ordinary cases of constipation. He had watched the cases under his treatment and noticed that a case of malignant diphtheria would receive 1,000, 1,500, in some cases 2,000 units, and in 24 hours such a case would be transformed into one of simple sore throat. The question of dosage could not be answered definitely, for if any of the members were asked the dose of castor oil to be given in a case of constipation they would say that it would depend upon many things. While one case might be relieved by a teaspoonful, another would require a tablespoonful. He had seen some cases receive 6,000 units of antitoxin, but a dose of 2,000 units would be a good initial dose in a malignant case of diphtheria. The speaker saw before leaving New York a case of malignant diphtheria with distinct septic symptoms, temperature 101°, the child decidedly pale and anemic from the whole system being drenched with the septic elements besides the loss of sleep and the want of food, etc. The first thing he did was to relieve the asphyxia by inserting a tube into the throat, after which he injected 2,500 units of antitoxin, and he agreed with the attending physician that if the child's condition was not better by 9 o'clock the following morning the same dose should be repeated.

Dr. H. A. WEST, of Galveston, Tex., said that the idea he had had in regard to the *modus operandi* of the diphtheria antitoxin was that it is a remedy which is especially active as an antidote to the toxin of diphtheria. When it is claimed that this serum acts upon the bacilli; that it has an effect upon the lesions produced by the bacilli in addition to this antidotal effect it involved an entirely different explanation. If it has been exclusively proven that diphtheria serum cures cases of diphtheria, then it must be admitted that it has an effect both upon toxins and bacilli.

Dr. ARNOLD, of Pennsylvania, said that upon the advent of antitoxin he hailed it with as much delight as any one. He began its use early and for the time everything seemed auspicious. The manifestations were prompt; the membranes separated and it was possible to prognosticate changes and see them take place afterwards. During the early part of the

winter he was called to see a child that had been treated by another physician for tonsilitis. A bacteriologic examination revealed the presence of the bacillus of diphtheria. He used the antitoxin but the child died. About two miles from that spot he had a child sick with diphtheria; he used the antitoxin, the membrane disappeared from the throat, there was an abnormally slow pulse, dropping to 50, 45 and 40 beats to the minute, and the boy died. About two miles and a half distant he used antitoxin in the case of another child, which was followed by disappearance of the membrane, but there was complete suppression of the urine, with a fatal result.

Dr. Cook, of Chicago, has had a record of 89 cases, diagnosed microscopically, without a death, without an intubation and without a second dose of antitoxin. Some of the cases were quite bad ones. He made his first observation in Berlin under Baginsky. His 89 cases received on an average 2,000 units. Once or twice he gave only 1,000 units, and as far as he could see they did as well, although they were mild cases. Ten or fifteen of them were cases of laryngeal diphtheria.

Dr. C. GRAEFE, of Sandusky, Ohio, said that last winter he found himself in this position during an epidemic, after using the ordinary remedies for the ordinary types of nasal disease, there developed suddenly a great line of laryngeal cases which died promptly under ordinary treatment. According to the report of the health officer there were 53 deaths and 47 recoveries during the epidemic. His cases in which he had used antitoxin only for the laryngeal ones, showed a record of 14 recoveries out of 16 cases. In three others in the practice of other physicians in which he had used antitoxin there were three deaths.

Dr. J. MACFARLAND, of Philadelphia, stated that his administrations of antitoxin numbered something over 3,000, but they had been given in animals. The antitoxin treatment of diphtheria rested on scientific principles worked out in the laboratory. About six weeks ago in the laboratory he gave a horse 100 c.c. of antitoxin serum; he could not give the exact strength of the serum, but he supposes the serum averaged 100 or 150 units to the c.c. The first day he gave 100 c.c. and the next day 150 c.c., and the horse showed no symptoms. A definite amount of serum protects a guinea pig against an equal amount of diphtheria poisoning. He had no theory of his own to present, but was rather inclined to that advanced by Professor Klebs that the antitoxin is a toxin in a changed form. At any rate, it is an absolutely certain antidote, a neutralizing agent.

Dr. G. W. Cox, of Chicago, said one point was very frequently overlooked, namely, the selection of the serum. It has been his fortune to have the druggist go for the serum to a room with a temperature of 75 or 80°, where the antitoxin had

remained for perhaps two or three months. Experience has shown that the antitoxin must be kept in a cool place or it loses its potency in a short time, and the speaker had no doubt that many of the failures in the use of antitoxin could be traced directly to this source.

Dr. H. H. WITHERSTINE, of Rochester, Minnesota, reported 25 cases that he had recently treated, with one death. In one family there were ten children. When called upon to see the first child taken sick he isolated it and administered antitoxin about 5 o'clock in the afternoon. The child had been ill for three days with a pulse of 140. The next day the membrane came off the throat and the child was playing. He kept the child isolated from the rest of the family until the bacteriologic examination revealed no more germs, after which the child was permitted to go with the rest of the children. Unfortunately a few weeks after that another child in the same family was put to sleep in the same room. He spoke of this to emphasize the importance of more thorough cleansing and fumigation. Fumigation as practiced in most cases is entirely useless. Another child was taken ill with diphtheria and so on one after another. He used 2,000 units of antitoxin in every case, but only one dose. Coming to the last children he made up his mind that they would also have diphtheria and he injected the prophylactic dose, and they did not have the disease.

Dr. EDWIN ROSENTHAL, of Philadelphia, said the mortality in the epidemic he had studied was not better than before the use of antitoxin. In estimating statistics it was well to acknowledge that the mortality at different seasons of the year, in different institutions and in different constitutions differed materially. This afternoon he talked with a physician about an epidemic that had been raging for the past two weeks, during which 102 cases were treated and three deaths resulted. In only some five or six cases of this number was antitoxin used. Had antitoxin been used in all of the 102 cases, the list would have gone to swell the good statistics of the antitoxin treatment.

Dr. E. M. HOUGHTON, of Detroit, stated that during the twelve months preceding April last in his city, according to the report of the health officer, between 800 and 900 cases of diphtheria were treated, nearly all of which were diagnosed by bacteriologic examination. About 400 of this number were not treated with antitoxin, while the other 400 were. The mortality of those treated without antitoxin was 34.9 per cent., while in those treated with antitoxin the mortality was 12.5 per cent.

As to prophylaxis, antitoxin had not been used as much and with as good success as it might be. During the first few years he has had to deal with diphtheria in the wards of the

Children's Hospital. Two years ago he was called in consultation, and most of the physicians agreed with him that it would be a good plan to use diphtheria antitoxin as a prophylactic. Thirty-four patients were injected. The house physician, however, was not injected. No more cases developed, except that the house physician developed a marked case of nasal diphtheria. There have since been three outbreaks, all of which have been promptly stopped in the same way. Three of the children injected were under three years of age, and no deleterious results were noticed in any of the cases, with the exception of a slight urticaria in nine cases.

Dr. LOUIS FISCHER, of New York, in closing, said that if a bacteriologic examination was made of a specimen taken from the site of infection the bacilli could be cultivated for weeks if there were no macroscopic evidences of infection. In this treatment physicians did not attempt to attack the bacilli so much as the swelling and edema, the results of invasion of the bacilli. He desired to go on record as saying that he is not one who, every time he sees a Klebs-Loeffler bacillus in the throat or mouth, insists on using antitoxin. On the other hand, he believes in using antitoxin in cases that need it.

A New Intubation Tube and Introducer was shown by Dr. LOUIS FISCHER. The advantages are that he does away with an obturator and substitutes a rubber tube for the ordinary metal tube. He had used the tube in nine cases with satisfactory results, and the tube has remained in position in one case for seven days. Another item was the cheapness of the tubes, as after use they could be burned.

Some Cases of Congenital Deformities.—This was the title of a paper by Dr. ELLA E. BARNES, of Birmingham, Ala. The author said that more stress should be laid on preventive medicine. As a rule, deformities at birth are accounted for by some superstition, and they could and should be explained by anatomical reasons. The early injury to cells may result in marked deformities. Later disturbances should not be considered true malformations.

Tubercular Meningitis was the title of a paper read by Dr. ANNIE S. DANIEL, in which she said that the life of the patient does not depend on an early diagnosis, as no remedy has been found for the disease. Younger children presented greater difficulty in diagnosis. Lumbar puncture is negative, as a rule. Forty-nine cases were reported, with autopsies in six. They were divided into those under two years, twenty-two cases, and twenty-seven that were over two years. Previous acute illnesses were observed in the majority, and were chiefly intestinal troubles, exanthemata, etc. In many cases a fall is the result of the malady, and not a cause, as generally considered, and should be termed a premonitory symptom.

Meningitis, a Complication of Measles.—Dr. THOS. W. MARVEY, of Orange, N. J., followed with a paper on the above, in which he dwelt upon the rarity in medical literature of meningitis occurring as a complication of this disease. He also briefly mentioned the cases that were on record of this combination, and the history of an interesting case of meningitis complicating measles was given.

The Clinical Importance of the Eye Symptoms in Arriving at a Diagnosis in Meningitis in Children was the title of a paper contributed by Dr. A. E. DAVIS, of New York. The paper was to direct attention to the eye symptoms of meningitis. Many of the eye symptoms of importance in meningitis are largely motor, which may be observed without the aid of the ophthalmoscope. Thirty-eight cases of meningitis were reported: thirteen, simple leptomeningitis; twelve, cerebro-spinal meningitis; thirteen, tuberculous.

In the thirteen cases of leptomeningitis there were no eye symptoms in eight. The patients with purulent meningitis, in which no eye symptoms were present, showed post-mortem, the meninges covered with pus and extensive adhesions between pia and dura mater.

In the cases of cerebro-spinal meningitis, eye symptoms were absent in seven. Loss of iris reflex was present in one, dilated and fixed pupils in another, strabismus in a third, and in the fourth the pupils were dilated, but reacted to light.

No eye symptoms were present in eight of those having tuberculous meningitis; pupils were dilated in one case, in one the left pupil only was dilated, in one there occurred extensive ulcerative keratitis and conjunctivitis, and in another dilated pupils and lagophthalmia. No tuberculous condition of the eye was seen in any case.

Whether symptoms are primary or secondary must be decided. The motor and visual disturbances should also be differentiated.

Cerebro-spinal meningitis gives as prominent symptoms paralysis of sixth, third, fourth, ophthalmic division of fifth, and seventh nerves, with nystagmus and ptosis from cortical lesions. Choked disc, optic neuritis, perineuritis, plastic and suppurative iritis, conjunctivitis, edema of the lids, hemianopsia, as a cortex or tract lesion.

In simple or leptomeningitis the eye symptoms are of more importance in determining the diagnosis than in the cerebro-spinal type. The most reliable is optic neuritis. Many cases occur as sequelæ to middle ear suppuration of a chronic character. Metastasis is another frequent cause. The neuritis is always consecutive to a complicating meningitis.

In tuberculous meningitis the eye symptoms are largely the same as in the simple form.

Hysterical Contractures in Children was the title of a paper read by Dr. E. W. BURR, of Philadelphia, in which he stated that hysteria might be considered very frequent from literature, when in truth it is very infrequent, especially in children. A case of pseudospinal disease was reported in a child six years old, with pain along the spine, trouble in walking, and lateral curvature. Pain on deep pressure was not present when the child's attention was withdrawn. Reflexes were good and there was no paralysis. The case was hysteria. Rest, isolation and milk diet cured the patient.

The second case was in a female of nine years. Barking like a dog and irregular shrugging of shoulders were the first symptoms. These disappeared during sleep. No paralysis nor contraction of the field of vision was discovered. The same treatment was successful.

Girl, aged eleven years, had typhoid fever, pain in the hips and flexion of the thighs and legs. Force did not overcome the contracture. Pain was caused by passive motion. No palsies were present. All contractures relaxed, save in right hip, under anesthesia. Isolation and passive movements cured all but the right hip, in which there was organic disease.

Infant Feeding was the title of a paper read by Dr. A. C. CORTRON, of Chicago. He asked, "How shall we feed the baby?" If it takes the breast and is doing well let it alone. If not doing well find wherein the error lies, ascertain if the mother's milk can be made adequate, examine as to total amount, and its various ingredients. Analysis of the mother's milk must be made. Marchand's and other tests for estimation of fat in milk was found to be wanting. Holt's method is not practical. The best method is Babcock's, although it is clumsy. By taking specific gravity and amount of butter fat we have two factors. Allow equation—total solids equal $1/4$ of specific gravity, taking last two figures, and $6/5$ of fat plus 14. If milk shows marked departure from normal, try to regulate, meanwhile pumping breast and testing frequently. The multitude of artificial foods is evidence that we have no substitute for mother's milk. The ideal one must contain all elements of mother's milk, in like proportion. Total quantity must equal that obtained from the mother. That it contain the antiscorbutic element, and be always fresh, are essential.

Condensed Milk, Its Uses and Limitations in Infant Feeding was the title of a paper read by Dr. C. G. KERLEY, of New York. He said that an analysis of mother's milk showed that it contained from $3\frac{1}{2}$ to 4 per cent. of fats, 2 per cent. of proteids, and 7 per cent. of sugar. The analysis of a condensed milk mixture, when diluted for use in the proportion of one part in six of water, gave us 1 per cent. of fat, 1.2 per cent. proteids, and 8 per cent. of sugar, a greater part of the latter being

cane sugar. It was extremely rare, however, that we met with a child that was being fed on so strong a mixture, for the reason that it would almost surely produce colic and indigestion. The condensed-milk-fed children who came under his care were being fed, as a rule, on a mixture diluted to one in twelve or one in fourteen. The one-in-twelve dilution gave a mixture containing 0.5 per cent. of fat, 0.6 per cent. proteids, and 4 per cent. of sugar. Comparing this with breast milk it might readily be seen how inefficient it must be for a permanent diet. Even if the one-in-six dilution was given, it would still be inadequate.

Of the many hundred marasmic and rachitic infants that he had had an opportunity to observe, fully ninety-five per cent. had been fed on the meal foods or on canned condensed milk, chiefly the latter. This ill-conditioned class of children, with their starved muscular and nervous systems and catarrhal tendencies, fall an easy prey to the infectious diseases during the entire year; to broncho-pneumonia in winter, and to the gastro-intestinal diseases in summer. Notwithstanding what had been said, he occasionally met with children that had been fed exclusively on condensed milk up to the ninth or tenth month, and that had thrived fairly well. These would usually present some evidences of bone rachitis, although the development otherwise would apparently be normal. These infants were held up to us as evidences of the value of the diet in question, and we hear of a great many more than we see. These isolated instances were to be explained by the fact that there were a few infants whose adaptation to abnormal conditions are so great that they could not be injured by ordinary improper feeding.

An illustration of this was furnished by the case of a well-nourished one-year-old infant that was brought to the outpatient department of the Babies' Hospital to be treated for bronchitis. Its diet up to the third month had been mother's milk and condensed milk. Since then it had consisted of meat, potatoes, bread, rice, crackers, soup, and condensed milk. Tea and coffee were given when the child wanted a drink, and it had beer on Sundays and holidays. Another case in point: A babe six months of age was brought to the dispensary on account of a sharp attack of diarrhea and vomiting. In addition to medical treatment, a diet of barley-water and egg-water was ordered. Recovery followed shortly, and the mother was instructed to gradually resume the former milk diet. The author did not see the patient for two months, when he was brought to the dispensary because of an attack of whooping-cough. While being undressed, preparatory to an examination of the chest being made, he noticed that the stomach was enormously enlarged. Upon inquiry as to the cause, the mother replied that she supposed it was due to the

large quantity of egg and barley-water taken. A second gastro-intestinal attack had followed the resumption of a milk diet, and the mother thought it would be easier to keep him well on egg and barley-water than to keep him ill on milk. He had ingested from five to six pints of this preparation daily, and although rather pale, was strong and active. These children thrived for the same reason that older children sometimes thrive on an exclusive diet of canned condensed milk or plain meal, but the badly fed children who managed to escape resulting disease because of special powers of adaptation were few in comparison with the number that fail. In short, condensed milk was unsuitable as a permanent infant food, in that it was inadequate to the demands of the growing child.

In spite of what had been said, his out-patients consumed hundreds of pounds of condensed milk yearly, and under his direction. If condensed milk was so unsatisfactory a diet, as generally used, when, how, and under what conditions might its use be advanced? To begin with, he employed condensed milk voluntarily under one condition only. He met with a few delicate infants, usually from two to ten weeks old, who must be bottle-fed, and for whom it was impossible to modify fresh cows' milk. These children were unable to assimilate the proteids contained in fresh cows' milk in sufficient amount to thrive; and under those circumstances he ordered the unsweetened or canned condensed milk, preferably the former. A dilution of one-in-twelve would oftentimes be borne without inconvenience, and the child would do well for six or eight weeks, when it would be able to digest a modified fresh cows' milk containing a low percentage of proteids. Why the children were able to digest and assimilate the proteids of condensed milk when those of fresh milk would produce illness, he was unable to explain.

The conclusions arrived at were as follows :

1. In the artificial feeding of infants, always determine as exactly as possible the percentages of the food constituents.
2. Condensed milk alone was an indifferent substitute for mother's milk, no matter what the age of the infant might be.
3. Condensed milk alone should not be given after the third month.
4. Condensed milk, fortified, might be made an acceptable diet for infants; alone, it was a food upon which a certain number of children exist until age or changed conditions allow of a better diet; and inasmuch as there was nothing to take its place among the very poor, its value to them was inestimable.

These two papers were then discussed jointly:

DR. J. P. CROZER-GRIFFITH, of Philadelphia, in opening the discussion stated that the essayist had maintained strongly the necessity of feeding the child at the mother's breast when it was at all possible to do so. At first thought this might seem altogether unnecessary, but still there were physicians who made it a practice to wean the child very quickly when there was no necessity for it, taking the view that it could be fed just as well on the bottle. The child may be fed well on the bottle, but nobody could tell whether it would do well on the bottle. Leaving the mother out of the question, there was no good reason for weaning the child unless it had to be weaned. It was well to consider whether or not the mother's milk could be modified before considering the weaning of the child.

Relative to having the prepared milk of the same percentage as the mother's milk, the two substances were not alike, although the two proteids may have the same percentage, still the substances in the cow's milk and human milk were different. It did not follow that one per cent. of albuminoids in the cow's milk would be digested as well as one per cent. of albuminoids in mother's milk. We must try to determine what percentage of the different constituents the child will take, and this could be ascertained only by trial. In the speaker's opinion we should begin with percentages distinctly lower than we would expect the child to take. We are dealing with the living organism and not a machine, and we must not force our children too much to be fed. This was one danger we must avoid in our modification of milk.

Dr. W. S. CHRISTOPHER, of Chicago, said there were conditions under which condensed milk was absolutely essential if life was to be saved. All pediatricians admitted the dangers of condensed milk; that it was a milk deficient in fat and proteids, and that it led to the production of scurvy and rickets was well known. But it need not lead to those things in the hands of practitioners who knew how to prevent them. With cod-liver oil, beef juice and some fruit juice, we had a food that was almost perfect. Some children required condensed milk to avoid the poisonous effects of cows' milk. Even pure milk would produce in the system of some children a substance apparently toxic which they could not bear. So-called "spitting babies" seemed to have less disturbance when fed on condensed milk. In boiled milk there was removed in the coagulum a substance which tended to produce these irregularities in children. If this was not sufficient, condensed milk would be frequently found satisfactory. If not, then resort to dried food, etc. In this shape the albuminoids are rendered indigestible, and could not be absorbed by the child. In not

only the "spitting baby," but also in the child that had the tendency to the formation of gas in the stomach, eruptions on the skin, or catarrhal affections, this type of food would do better than raw milk.

Dr. T. M. ROTCH, of Boston, stated that the greatest advancement in infant feeding was that we were getting rid of the old effete ideas concerning it, as well as the fears that came up regarding the use of cows' milk, and we had in their place an instrument which in the future would save the lives of a great many children. The fault of infant feeding was in the percentages, in that we do not know how to use the different percentages. Formerly milk was modified by mixing cream and milk, but this in no way compares with the exact percentages we will deal with in the future. Now we could get those exact percentages and were beginning to use them. After having used them for five or six years we would be more exact in our knowledge; but to say that children could not digest the lower percentages was incorrect. In the future the busy physician would not make the analyses himself, but this would be left for experts to say what are the percentages, and the physician would learn to think and to speak in percentages. There was nothing definite known about the analysis of mother's milk. Good human breast milk differed in percentage. So a child might do well when nursed by its mother, but might have indigestion when given to a wet-nurse, not that the milk was not good, but because it was not adapted to the use of the special infant. It was in the variety of the milk in which lies its virtue, and not in its exact percentage, and so we must vary our foods again and again for the special child.

Dr. JAMES J. CONCANNON, of New York, said he has had to look over something like three or four thousand children every year, and has become accustomed to the fact that nearly every kind of artificial food would fail in some cases. The mother's milk was not only different in different women, but it varied in the same woman according to her condition and diet. In many cases when the cows' milk failed, the use of fruit juice to prevent scurvy, and barley-water when the child would not retain the milk, supplied the want and the child thrived. In New York a goat could be easily obtained, and usually the child thrives on goats' milk. But the subject of working up artificial infant foods was largely overdone. Pediatricians ought to try to compel mothers to nurse their children. About one-fifth of the children artificially fed were fed so because the mothers would not nurse them, but gave up nursing at the end of the second month for various reasons.

There was one thing we could never put in artificial food and that was the antitoxic property in the mother's milk. The nursing child at the mother's breast was immune. When immunizing for diphtheria we may let the child go without an

immunizing dose when it was nursing. After the tenth month the milk loses this quality.

Dr. L. KELLEY, of Ohio, inquired how we were to determine clinically when to add more fat and when to reduce it; when to add albuminoids and when to reduce them; and so on, with the other ingredients.

Dr. COULBOURN, of Alabama, said the day would come when thousands of infants would be saved by the food advised by the able authorities of to-day. He spoke more especially for country practitioners in towns with one thousand or less inhabitants. If we could get modified cows' milk with cream or bicarbonate of soda or a pancreatin extract, this was what was wanted. Another point in the manner of feeding the infant: More harm arises from the contamination of the milk after the family receives it before the child gets it into his stomach than could be imagined. It was not right in his opinion to feed the child with the cup and spoon altogether, but when the infant was three years of age we could greatly eliminate the dangers of the nursing bottle, and especially the use of the long nursing tube.

Dr. EDWIN ROSENTHAL, of Philadelphia, begins with a little child that is only one day old by giving it half milk and half water. He rarely uses sugar. In regard to the formula of Dr. Cotton it would be interesting to note what percentage he considered the two eggs to represent. In a certain class of people a preparation called zweibach was used. When oatmeal was given to the child a good many of them became scorbutic. One case which the doctor fed on sterilized milk became rickety.

Dr. BYERS, of Alabama, asked Dr. Rotch what he regarded as the normal standard of mother's milk, to which Dr. Rotch replied that this was obtained by averages, but we could not deal with averages when feeding an infant. The individual case had to be considered.

Dr. GRAHAM, of Philadelphia, had discussed this subject with a number of physicians in Philadelphia, and they all seemed to conclude that the more laboratory milk they used the more persistently they stuck to certain percentages for certain ages and varied those within certain limits. The fact that physicians all over the country were adopting the method, and that the sale of modified milk was rapidly increasing, tended to show that the trend of modern opinion was toward the use of milk modified according to definite methods.

Dr. JOHN A. LARRABEE, of Louisville, thought that what agreed admirably with one child did not with another. It was a matter of speculation and individuality in each case. If we hit it right we do well, but we will shoot no worse if we aim at a mark, and so it is well to have formulated plans. As to

goats' milk, he does not see why this should be a panacea. No one would be foolish enough to rent a level pasture for his cows if he wanted to make cheese, and we all know the climbing nature of the goat. Immunity in these cases comes from the infant not getting the germs. If the baby is nursed at the breast, and the breasts are kept clean, the child probably would not get the infectious disease that may be prevailing in the neighborhood, showing that the entrance of the micro-organisms is largely through the alimentary canal. A high temperature would devitalize and take out of the protoplasm of the milk what we wanted, and we could certainly render it sterile at a temperature much lower than 212° .

Dr. COTTON, in his closing remarks, stated that he would not attempt to give the clinical indications for the increase or diminution of the various ingredients.

New Methods of Resuscitating Still-Born and Feeble-Born Children was the title of a paper read by Dr. BEDFORD BROWN, of Alexandria, Va. The author, at the outset, stated that the causes of still-birth and feeble-birth were numerous and of a varied character. Among these may be enumerated ante-partum hemorrhage from placenta previa, or early separation of the placenta; infection from variola, rubeola, or scarlatina; the action of ergot; uremic poisoning in eclampsia; long delay of fetal head in pelvic cavity; compression of head from instruments; breech presentations; compressing of cord; twisting of cord around the neck of fetus; actual disease of cord from syphilitic degeneration; certain diseased states of placenta.

For a clear comprehension of the pathology, peculiar features, and symptoms of still-birth and feeble-birth it is necessary to divide the subject into three heads: the still-born, the feeble-born, and the dead-born.

Between all of these forms there is a marked distinction; and yet, in certain respects, they bear a considerable resemblance to each other. In the first place it is necessary that we should have a clear conception of what is meant by the term still-born. Does the term apply indiscriminately to a dead-born infant and equally to a mere feeble-born infant? The term is really applicable to neither condition, but to a state where all the vital functions are in a state of temporary suspension.

Definition of Still-Birth.—The general features of the still-born infant present all the indications of suspended animation; but this suspension, apparently profound, is only temporary, and vitality can be fully restored by proper means. In the still-born no arterial pulsation can be detected. The vital functions of cardiac action, respiration, and it may be secretion, reflex action, sensation, nervous power of the great centers, the brain, medulla, and spinal cord, and vaso-motor

system are in a state of temporary suspension. Here, then, is a very striking resemblance between the general features of the still-born and the dead-born, and the difference can only be ascertained by the observation of certain symptoms, and by proper tests.

Definition of a Feeble-Birth.—He would define the feeble-born, which is often mistaken for the still-born, as a state in which there is only a partial suspension of the vital functions, as the function of circulation, respiration, sensation, volition, reflex action.

The cardiac sounds are barely perceptible; the function of respiration amounts to a mere occasional sigh or gasp; the reflex functions of the cord are greatly impaired, and so are the functions of sensation and muscular or voluntary action. The power of swallowing is usually absent; the pulse is so feeble as to be scarcely perceptible; the cardiac sounds are exceedingly faint and can be barely detected.

This is the feeble-born infant. It is a state which we must not confound with that of the still-born. Then how shall we distinguish the dead- from the still-born? Not by the suspension of cardiac action, respiration, reflex action, voluntary action, the function of sensation, for there is absence of all these functions in both conditions.

Treatment.—In his obstetrical practice during the past six or eight years, in all cases of still-born and feeble-born infants under his care, he has experimented very carefully and made very accurate observations on the hypodermic method of treating these cases. He has found the subcutaneous medication the most prompt, certain, and successful method for the restoration of both the still-born and the feeble-born. He finds it the most convenient, easy of application, and consumes less time than any other method. The system of the still-born and feeble-born infant responds more promptly and energetically to subcutaneous treatment than any other.

The materials for treatment are always at hand and convenient. Of course, these little creatures are incapable of swallowing either nourishment or medicine, and the chief and only avenues left are through the skin and intestines.

In all cases of still-born infants his method was to insert in each arm with hypodermic syringe four or five drops of whisky and a single drop of tincture of belladonna. If the infant is only still-born the nervous and circulatory system will respond quickly and promptly to the stimulant action. If the infant is dead beyond resuscitation there will be no response whatever. But if there is no response, or a very feeble response, he goes still further by injecting a drachm or two of warm sterilized water under the skin, and about two drachms with a drop of aromatic spirits of ammonia into the intestines, and then awaits the result. In his experience, if these

measures fail to produce reaction, it constitutes a fair test of the existence or absence of vitality. If the temperature continues to decline in the body of the infant while these measures are in progress, we may rest satisfied that the vital spark has taken its flight.

The first indication of a response to the action of the hypodermic remedies in these cases of profound asphyxia is very soon present after the hypodermic. The muscles of the eyelids contract, and the eyes, previously closed, suddenly open; then the respiratory muscles are brought into rapid action, the glottis is expanded, air is inhaled into the lungs and suddenly exhaled, forming the shrill cry of the new-born infant.

These phenomena illustrate to us the energetic action of the stimulants on the nervous centers, the brain, medulla, and spinal cord. Then follows the development of cardiac action and pulsation at the wrist, which was previously dormant. In these cases he always observed the development of reflex action in the respiratory nerves before that of cardiac action. Invariably following restoration of respiration there was development of cardiac action; they followed each other as cause and effect.

In cases of marked cyanosis he found subcutaneous injection of warm water at a temperature of 102° or 103° flushed the circulation, aided in the process of oxygenation, and stimulated the action of the heart and increased temperature.

Dr. T. B. GREENLEY, Meadowlawn, Ky., said he had never tried the experiments the essayist alluded to. When a child is still-born, he first dips his hand in a little cold water and touches its face. If that fails, he places it in a bath and with the two hands tries to produce artificial respiration. Sometimes he has succeeded by working the tongue and clearing out the throat.

Dr. GEORGE N. ACKER, Washington, stated that the sulphate of strychnia has been used very successfully, especially in Washington, where recently a number of cases were reported by Dr. Prior, in which $\frac{1}{200}$ gr. of strychnia produced marvelous results. Dr. Acker has been exceedingly successful with the external application of warm whisky in conjunction with artificial respiration. In fact, he believes that these children, if they have any vitality about them, will breathe after a time. The doctor cited in illustration the case of an illegitimate child, which he almost hoped would not recover. The child was placed in a closet apparently dead, but after a half hour or so it began to scream.

Dr. J. A. LARRABEE, of Louisville, believes the culmination of stimulation is to be found in strychnia, which causes an awakening of the cells of the cord. In these cases the heart is already full and does not call for cardiac stimulation. The matter of retention of life in the new-born makes the crime of

infanticide even more terrible, if possible. A case was reported in the Medico-Chirurgical Society, of Louisville, at the last meeting, in which it was certainly possible for this amphibious animal to be in the world and live seven minutes with the amniotic sac entire and the placenta expelled. In resuscitation, here, as in drowning, we make a great many mistakes by irregular attempts at doing something without a definite idea of what to do. The speaker had saved a child, after tongue-pulling and chest-pressure, by calling on the reflexes through the sphincter ani, but he thinks this method is perhaps one of the least important. The best method is to bend the child back like a hook, for full inspiration, and then bend it forward like closing a book, until expiration is complete, and repeat this rhythmically. By this method he has very seldom failed in five or six minutes to resuscitate the infant.

Dr. BEDFORD BROWN, of Virginia, prefers the hypodermic method to all others, because of its great promptness. He had not known of Dr. Prior's report of cases treated with strychnia and so did not mention them in the paper. However, the doctor stated that he preferred whisky with or without belladonna.

Treatment of Hernia in Infancy and Childhood was the title of a paper read by Dr. WILLIAM B. COLEY, of New York.

Dr. WILLIAM L. RODMAN, of Louisville, in opening the discussion, said the views of the essayist should be considered *ex cathedra*. The essayist was the first to advocate and popularize the operation for hernia in children, and he has had a larger experience along this line than anybody else in this country. The speaker believed Dr. Coley should be congratulated upon the large number of cases in which he had primary union. Dr. Rodman has had suppuration in at least 15 to 20 per cent. of cases, but the usually accepted belief that suppuration compromises the final result has not been realized in his cases. While he believes deep-seated suppuration may defeat the object in view, he doubts very much whether superficial suppuration will militate against a permanent result. He has used kangaroo tendon in a large number of cases. While theoretically it is the best of all sutures, abiding in the tissues sufficiently long to secure union, yet he believes it will be followed by suppuration in a larger number of cases than when silk is used. As to congenital hernia and hydrocele in children, if the speaker were to be guided by his own experience, he would say these are more frequent than most authorities state. The doctor then referred to transplantation of the testicle. In a recent case he was not able to bring the testicle down into the scrotum, and rather than sacrifice the testicle, he put it back into the cavity. While, as a rule, we should not operate until the fourth year, yet in some cases the

truss is worn so unintelligently that an operation is preferable. He has operated upon two cases under this age. One of them was strangulated.

Dr. DEGARMO, of New York, treats umbilical hernia in children under one year of age in the manner the essayist described. After that the child is obliged to wear a truss for a year or two. In his experience, the youngest child seen with femoral hernia was eight years old, and he has not seen more than three under twelve years of age. Six or eight years ago he reported one thousand cases of hernia treated in private practice. There was a cure of fully 40 per cent. of those cases by means of the truss, and those cures were practically all in children under fourteen years. If it can be intelligently carried out, we should keep these children under treatment a year before operation.

Dr. HAL C. WYMAN, of Detroit, thinks in many of these cases the little patient suffers from too much intestine and not enough abdomen to cover it, which he believes explains the difficulty in attempting to keep the intestine in the abdomen by an unyielding apparatus. The principle that involves the closure of the internal ring, irrespective of the relation of the cord, or testicle to it, is the one he has found the most successful. When there is an insufficiency of muscle or aponeurosis for this purpose, we may get the material from the external oblique muscle, by transferring some of it to the opening and stitching it to the ligament of Poupart.

Dr. COLEY, in closing, said he regards suppuration as a very much more important matter than Dr. Rodman appears to consider it. However, he believes the point about superficial suppuration is well taken. In the three cases in which there was relapse, the first done by silk sutures, there was bad suppuration and the silk sutures came out. It is possible to bury silk and silver wire, and in the majority of cases they will give no trouble. But in the experience of the doctor, in over twenty cases bad results were due to this cause. The speaker was opposed to transplanting the testicle. It is seldom advisable to operate on an undescended testicle. The truss should certainly be used after one year in private practice. But in the clinics we are not always able to get good intelligent treatment.

Dr. A. E. GALLANT, of New York, made some remarks on **Van Arsdale's Triangular Splint for Fractures of the Femur in Children**, and spoke of the use of card board as splint material. In the discussion, Dr. JOHN A. LARRABEE, of Louisville, stated that those who were out to the Children's Hospital and saw this method demonstrated, were impressed with its utility. Whoever treats fracture at any age will always find that he is in hot water until the case is discharged, for he cannot be certain what the result will be. Children are

bound to get up, and any apparatus or splint renders them very filthy and they frequently become excoriated.

The Influence of Our Present School System on the Health and Development of the Child was the title of a paper contributed by Dr. E. S. RAWLINS, of Wyoming, and read by Dr. ROSENTHAL.

Dr. LONDON, of Massachusetts, related his experience in raising his child from the age of four weeks. He began with milk and water, and when the child commenced to lose weight he changed to whole milk. This method he found eminently satisfactory. He believes many children are now being spoiled in the schools. The children are kept in school from five to fourteen years and as much longer as they desire to stay, without regard to health.

Dr. JEFFRIES stated that in Chester, his home, there are some school-houses, and so far as the heating, ventilating and seating are concerned, they know how to build them. A few months ago the doctor began to study the inside workings of these schools. He found that the children entered school at six years of age, when they study daily: Drawing (otherwise called form study), writing, nature study, reading, spelling (with special reference to diacritic marking), physical culture, board work, music, physiology and hygiene (with special reference to the dangers of intoxicating liquors, etc.). After they have been in school six years they study: arithmetic, grammar, geography, spelling, hygiene, writing, drawing, music, reading, physical culture and history. The speaker attributed to this much of the trouble we have in the public schools.

Dr. ELLIS believes orthopedic cases should not be sent to the gymnasium. He had several cases made worse by gymnasium work. These cases should be put in the hands of people who do this work especially.

Dr. T. C. MARTIN, of Cleveland, thought a lunch provided by the school would be an excellent thing, since we could then regulate the quantity and quality of the food. He believes the child should be examined before taking up any study or gymnastic exercises.

Dr. J. A. LARRABEE, Louisville, referred to the wrecks we have about the time of puberty. About the time nature is struggling to make developments necessary to the organism, the educator is struggling to make development essential to the graduation of his pupil. In speaking of exercise, the doctor is opposed to systematic or rhythmical exercise by any plan which does not let the mind rest. Such exercise should in no way supplant out-door free exercise. He thought the point of over-study well illustrated by Dr. Jeffries' remarks. Too often the scholar is educated until he cannot find what he wants when he wants it, and he becomes an educated imbecile.

Dr. SIGDOWSKY, of Philadelphia, from watching his two children was convinced that the number of studies is not oppressing when the school-room is bright and airy and the school teacher humane and congenial. He thought it would be well if the physicians would try to recompense the poorer children in the school-rooms for the deficiencies at home. In Philadelphia they have advocated having at the schools a matron and a room set aside for washing the children's faces and hands and combing their hair, and for giving them a bath at least once a week. This refers especially to the poorer part of the city.

Dr. D. O'NEILL KANE, of Kane, Pa., laid considerable stress on looking after the children outside of schools. He had observed many children out until eight or ten o'clock at night, about the streets, often without the parents knowing when they did return home. Too little attention is paid to children engaged in places outside of the school, and in this way they acquire many bad habits and much ill health that is attributed to the school life. The speaker had found cigarette smoking and tobacco chewing very common among these children, and that even intemperance is not uncommon among them. And on two occasions last summer as many as eight or ten children were seen intoxicated in Kane, at ages varying from eight to twelve years. The doctor had occasion to treat last year two children twelve and nine years of age, a boy and girl, for gonorrhea contracted in a secret society of about fifteen members, children varying in age from seven to eighteen years old.

Dr. EDWIN ROSENTHAL, of Philadelphia, had been educated by the public school system of Philadelphia. He began his education at the age of four years, and when twelve years old entered the Central High School of Philadelphia. When he entered the College of Pharmacy, much he had learned was of little use to him, and he found that his right and left side were not alike. So he thought there was, perhaps, something wrong in the public schools. He had placed his child under Professor Bartlett. The first two years she had only two hours' study daily; the next four years she had three and a half hours' daily, and then until maturity four hours' study daily. She had what the doctor did not have, that is, a love for the school. She is perfectly healthy and the doctor is perfectly satisfied with the school.

Dr. I. N. LOVE, of St. Louis, had been impressed that too often the physician does not do his duty in instructing the mother in her duty to the children and school. If the child comes home with a criticism of the teacher, he should be corrected at once. He should be instructed to respect as well as love his teacher.

Dr. SAMUEL E. WOODY, of Louisville, said that when he thought of the wonderful advance made since he sat in the

school-house, with vitiated air, except when it was relieved by dangerous draughts; sat there from early morning until evening, sat there bound down by a stupidity that was inimical to all advance; and when he contrasted that to the great variety of study and the beautiful surroundings children now have, it seemed to him instead of criticising these men, we should thank those who are making teaching an art.

Dr. JEFFRIES, of Chester, was sorry the previous speaker did not contrast the young man from the schools to-day with the young man from the schools at the time to which he referred.

The Early Recognition and Treatment of Defective Development of Children was a paper read by Dr. LOUIS F. BISHOP, of New York; and Dr. JAMES J. CONCANNON, of New York, followed with one on **Abnormal Respiration in Infants from Obstruction in the Upper Air Passages**.

The Management of Children with Inherited Tubercular Diathesis was the title of a paper read by Dr. JOSEPH W. STICKLER, of Orange, N. J. Dr. W. S. CHRISTOPHER, in opening the discussion said the subject involves the relation of the environment of the child. The reason for the existence of the Section on Children's Diseases, the reason for the study of pediatrics at all as separate from other branches of medicine, is the necessity of reaching all the factors that go to make out of a puny child the strongest possible development. In the case of a child with tuberculous ancestors, it becomes a question of building up the tissues with that form of food which experience shall show to be the best. The speaker did not believe that the family history should ever be described as "negative." The element of nutrition includes not only the question of the quality and quantity of food, but also the relation of the different viscera of the body. Thus, if there is a mamalian pair of kidneys and a reptilian type of liver, which is not uncommon, there is such a maladjustment of organs that there necessarily will be a clashing of functions.

Dr. HENRY E. TULEY, of Louisville, thought the essayist laid too little stress upon the importance of infection in children. The speaker then cited Dr. Holt's statistics with reference to post-mortem findings in children, which seem to show that the infection comes largely through the bronchial glands. In many cases this was the only place where infection was noted, and in such cases the deep expansion of the lungs would have little or no effect on the development of tuberculosis. These children develop the condition of hospitalism quicker than other children. The providing for them of open air roof-gardens and sunny places and open air porches is certainly looking to the prevention of hospitalism. If they are placed in hospitals with other diseases, they should be kept there for as short a time as possible.

Dr. COOK, of Chicago, derives more benefit in these cases from massage than from any other method of treatment. A thing that is not frequently enough thought of is to carry the food out after it has been digested and thus aid the already overworked heart and lymphatic system by assisting the circulation through the venous circulation and getting the toxins thrown off through the alimentary canal. In reference to the prevention of reinfection of tuberculosis, especially in the poorer families, it is important to take up the carpets and renovate them. Get these patients to practice hygiene daily, and fewer cases will occur than under any other simple means the physician can direct.

Dr. EDWIN ROSENTHAL, of Philadelphia, said that in his city they can demand from the Board of Health the cleansing of a house in which a tuberculous patient has died. They show these patients how to make boxes to expectorate in, and how to disinfect the sputum, etc. In Philadelphia there are two homes for consumptives, one for males and one for females. There are also hospitals for consumptives, and there is a country home for the hospital, where most of these tuberculous patients are taken in. Then there is a seaside home for sick children, where these children are removed and given fresh air. In an infected atmosphere we cannot look for a cure.

Dr. TAYLOR, of Philadelphia, said that if the children engaged in some kind of sport in which there was a struggle for mastery, a game of ball, or a wrestling or boxing match, they exercised their muscles and their lungs. Fresh air brought into contact with the air vesicles in that way would do good, but fresh air brought in by twelve perfunctory breaths, as a rule, would not do as much good.

Dr. J. O. DECOURCY, of St. Libory, Ill., said that calisthenics, climatology and the various branches of hygiene are certainly absolutely necessary as preventative measures. Inhalations and lung expansion are of very great importance. But there is a step behind all this which the speaker thought demanded attention. If it is true that the sins of the fathers are visited on the children to the third and fourth generation, should the physician advise the children of tuberculous subjects to unite, or should we advise them on either side to select a partner in marriage who is as free from inherited predisposition to tuberculosis as may be possible.

Dr. W. S. CHRISTOPHER, Chicago, said there are but two channels of entrance for the micro-organisms. However, the speaker believed the assumption by Dr. Holt, which has been referred to, is incorrect. If it were correct, the doctor could not conceive an acceptable explanation for cases of primary tubercular meningitis. Hip-joint and Pott's disease also occur

without the lung or any other structure of the body being involved.

Dr. STICKLER, in closing, said that if he could he would object in every case where a tuberculous patient contemplated marrying a healthy individual. But in the paper he especially wanted to direct attention to our duty to the children already born. We hesitate sometimes very much before speaking to the parents about these children. In New Jersey there is a dairy presided over by a Committee of Investigation, who look into the quality of the milk and see that the dairyman does nothing prejudicial to the milk. There is a little trickery which is being done to a certain extent to which the doctor referred. The dairyman may have a call for three hundred or four hundred quarts of milk when perhaps there are only two hundred and fifty quarts that have been inspected. He will buy the balance he needs and sell it under the certified labels.



ABSTRACTS.

URETHRAL CALCULUS.

KUTNER (*Therap. Wochenschr.*, 1897, *iv*, 289) reports a case of urethral calculus in a boy thirteen years of age. The main symptom was great difficulty in urination. Examination by means of a sound elicited the fact that a calculus was present, situated at the bulbous sinus, where it must have been lodged for a number of years. He crushed the stone with Matthieu's forceps and a perfect recovery followed.

In the discussion, Israel acknowledged that in this case the operation had been successful, but he could not approve the general application of this method. It seemed to him much safer to perform urethrotomy and excision of the stone. In crushing the stone, we cannot be sure that a fragment might not stick in the urethral canal and cause inflammation and fever. He was not acquainted with any case in which urethrotomy had caused a stricture of the urethra.

EPIDEMIC HICCOUGH.

BERDACH (*Ibid.*, page 292) related cases of this neurosis which made its appearance in a class in a girls' school. Out of thirty-five scholars, sixteen contracted hiccough. In the first two cases hysterical stigmata were demonstrated. The spasms ceased during the night, could not be voluntarily suppressed, and appeared chiefly in anemic girls. These cases very frequently prove exceedingly refractory to medication.

ATRESIA OF THE EXTERNAL AUDITORY MEATUS.

ANTON (*Ibid.*, page 293) reports a case of this malformation. The child died nineteen days after birth from an attack of pneumonia. Externally the pinna of the ear was found distorted in such a manner that the auricle seemed turned back and partly adhered to the cheek. The opening of the external meatus was indicated by a small slit. In the vicinity of the upper jawbone a fissure of the hard and soft palate was noted, and the pyramid of the temporal bone on the deformed side was abnormally small in contrast with that of the normal side. The cartilaginous auditory canal was present, but ended in a blind extremity after a short distance. The ossicles were only rudimentary, but the labyrinth presented normal conditions. The anatomical findings perfectly agreed with those of published cases. The manner in which this deformity is produced finds an easy explanation in the embryonal arrangement of the auditory canal. As to the time of the occurrence of this deformity it may be said that this can be traced back

to a very early period, as the external organ of hearing is perfectly developed at the end of the second month of embryonal life. Of the etiology only little may be said with certainty. Perhaps inflammatory processes or syphilis should be considered. The practical questions, which arise in the consideration of these cases, are the hearing power and the probable result of an operation. As far as the power of hearing is concerned, this cannot be determined until a reliable examination for this purpose has been made. The success of an operation, in view of the anatomical findings, must be hopeless.

THE USE OF HOT WATER.

O. ROSENTHAL (*Ibid.*, page 254) takes the view that hot water deepens the respiration, increases the diffusion of gases, stimulates the heart's action and the circulation, increases metabolism, produces hyperemia of the vessels of the skin, at the same time relieves the central organs of their blood and causes a temporary stimulation as well as contraction of the whole nervous system. On the other hand it produces by its continuous application dilatation of the superficial blood-vessels. Properly speaking hot water is only an auxiliary measure.

A distinction should be made between its local and general application. In the first, care must be exercised in cases of valvular disease and angina pectoris, but a weak heart in itself is not a contraindication to its use. Disease of the walls of the blood vessels, and especially atheromatous degeneration of the arteries, are contraindication to its use. In the St. Olga Children's Hospital, at Moscow, hot water has been employed successfully in desperate cases of cerebro-spinal meningitis. In other cases favorable results were obtained in nephritis complicated by edema and emphysema, in rheumatism and in ischiatic disease. Mendel employed hot water locally in apoplexy instead of the ice bag. Silex recommends hot applications in the place of cold ones in various forms of conjunctivitis. Schweninger recommends hot frontal baths in migraine, and Rosenthal relieved a hemicrania, which resulted from overstrain to the eyes in microscopical work with electric light. In neurasthenia, occasional hot baths in addition to the regulation of the diet and gymnastics or massage, find their place. Brown and Hunter use hot compresses up to 140° F. for arresting parenchymatous hemorrhage.

In dermatology, the bactericidal quality of hot water is particularly useful. It has been extensively used in soft chancre, and it was observed that the poison of chancre loses its vitality at a temperature of 124° F., so that it cannot infect patients. Its employment is also recommended in favus, in chronic eczema of the vulva, also in pruritus ani and in general nervous pruritus, in chronic urticaria as well as in acne vulgaris and rosacea. In the treatment of a frozen nose, hot water compresses are also indicated.

A CASE OF PROGRESSIVE PARALYSIS IN A CHILD.

ZAPPERT (*Ibid.*, page 257) demonstrated this case in the Vienna Medical Club. The girl, at present thirteen years of age, was well developed during her early childhood. She presented two years ago for the first time some difficulty in walking, which consisted in dragging the left leg. Recently mental disturbances also made their appearance, the child became vicious, had an uncontrollable temper, was not able to follow its studies, acted without motive, and occasionally had spontaneous evacuations of the bowels and of the urine. At present there are flaccidity of the facial muscles, contortion of the mouth, a slight paresis of the right facial muscle, and absence of pupillary reaction to light, although accommodation is intact. The gait is careless, but not distinctly spastic, disturbances of speech are present as well as characteristic disturbance of writing. An ophthalmoscopic examination reveals a central choroiditis as in hereditary syphilis. The child had been formerly for a long time treated for hereditary syphilis in Prof. Kassowitz's institute. In forty-one cases of progressive paralysis in children, syphilis could be traced in 87.8 %, with great probability.

A CASE OF JACKSONIAN EPILEPSY CURED BY TREPHINING.

NAVRATIL (*Ibid.*, page 259) presented the following case to the Society of Hospital Surgeons. The patient, who was ten years of age, received a depression of the skull five years ago from a board which fell from a considerable height and struck his head. The patient suffered with paresthesia, and was unable to use his right hand. At times epileptiform attacks and choreic symptoms made their appearance.

Around the depression in the skull a semi-circular incision was made, a flap was made from the skin and periosteum, and the depressed portion of bone trephined with the chisel. The dura was then opened and again united by sutures, as nothing abnormal was found in the cortex except some flattening of the convolutions of the brain. The piece of bone which had been removed was replaced, and the flesh wound closed with interrupted sutures. Healing took place without reaction. The replaced portion of bone was firmly united in the seventh week.



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ORIGINAL ARTICLES.

THE TREATMENT OF CARIES OF THE SPINE.

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IN spite of the severe nature of the spinal disease, much good may be done, and cure often effected. If the case comes under treatment in its early stages, deformity may be prevented or reduced to a minimum. In the absence of complications, cure will most readily be obtained in the cervical, lower dorsal and lumbar regions; less readily and with more difficulty in the upper and mid-dorsal regions. The method of cure is by ankylosis, and when the disease is treated early and thoroughly the number of vertebræ ankylosed is small, the patient having a very useful back. I know of one who is able to climb difficult mountains, despite ankylosis of the four upper lumbar vertebræ. In his case there is no deformity. The treatment may extend over years, but the ultimate results are often such as to give solid satisfaction to the surgeon. Treatment may be described as general and local.

General Treatment.—Fresh air and sunshine are most valuable, particularly in tubercular cases. It is the deprivation of them, together with insanitary surroundings and bad food, that renders the treatment of poor patients so tedious. When the necessity for recumbency has ceased, the patient should be sent away to Margate or one of the East Coast resorts, or failing those, to a somewhat elevated dry place in

the country. But Margate air in tuberculosis is nearly a specific in itself. The food should be regular and plentiful, avoiding saccharine and starchy constituents in excess. The stomach and bowels must be regulated and constipation prevented. The best laxative in children is pulv. glycyrrhizæ 3 ss-3 j at bedtime. Cod liver oil, cream, or one of the malt extracts are useful, and we may from time to time give iron in the form of syr. ferri phosphatis co., or syr. ferri iodid 3 j thrice daily. In tubercular cases such general treatment is essential. In non-tubercular cases it assists their recovery most markedly.

Treatment Direct to the Spine.—The principles of treatment are three in number:—

(a) To fix the vertebral column, and to place it in the best possible circumstances for healing.

(b) To remove the weight of the upper part of the body from the diseased vetebrae.

(c) To prevent, as far as possible, unnecessary deformity by supporting the trunk, especially in front; and if deformity has occurred, to limit its increase.

To carry out these principles we have two methods at our disposal, viz: recumbency and the use of retentive appliances. They may be employed separately or in combination in individual cases, but can never be used indiscriminately. The precise value of each varies according to the age, stage of the disease, and the different regions affected.

Recumbency.—Indications for:

1. In all acute cases in which there are considerable pain, distress and impairment of the general health.

2. When, on employing the "palm-pressure" test to the back, it is found to be yielding anteriorly.

3. When paralysis and abscess are threatened.

4. Particularly in cases of severe cervical and lower lumbar caries.

5. In those patients who become easily tired on their feet, and in those who, apparently well supported mechanically, frequently desire to lie down.

6. In children recumbency may be resorted to with less danger to the general health than in adults. The immediate effects of recumbency are good. The pain disappears, the nervous irritability is lost, the face loses its anxious aspect, the

patient often puts on fat, although the muscles of the limbs diminish in size.

The *advantages* are thus evident. The relief of pain, the limitation of the deformity and in some cases its recession, the gradual clearing up of any paresis, and the cessation of increase in the size of an abscess, are all good points.

The *disadvantages* are that in adults there is, after a comparatively short improvement, a marked decline in general health; anemia and constipation ensue, and wasting again appears. In the case of children these are not marked. Provided the room be airy and sunshiny, young patients bear the prolonged lying down better than adults. But as caged animals are found to be liable to tubercular affections, so children deprived of their liberty will be unable to recover as rapidly as desirable from tubercular troubles. Formerly recumbency was persisted in for years, but now after a time we have the opportunity of giving patients more liberty by the use of plaster of Paris corsets, or some mechanical support such as a poroplastic jacket. It must be clearly borne in mind that when recumbency is demanded it must be absolute as long as it lasts.

The **duration of recumbency** can scarcely be specified in set terms of months. Each individual case must be judged on its merits. At the National Orthopedic Hospital I am accustomed to keep children recumbent until all pain has disappeared; until the palm-pressure best shows the back to be consolidated; and until, with a little support from the nurse, the child can be sat up carefully for a few minutes, such raising to the vertical position not being accompanied nor followed by the pain. In cases which are doing well, the patient becomes restless, moves his arms and legs freely and fidgets constantly, or even attempts to turn over.

One finds, however, that unless the case is past treatment, the condition of the spine has markedly improved in three to nine months.

Points to be noted in placing a patient in the recumbent position.

1. The mattress should be of horsehair, firm, flat, and not too hard, pillows beneath the head being dispensed with.

2. Air-beds or water-beds are best avoided, on account of their instability. They are of doubtful service if the patient

is very thin and bed sores threaten. These may be obviated by alternating between the prone and supine positions.

3. It is necessary in most cases to employ some retentive arrangement to prevent movement. In cervical and dorsal cases a band across the chest, or a knitted-wool strap passing across the chest, with circlets for the arms, and fastening to the sides of the bed, is desirable. In disease of the lumbar region it is necessary to supplement the upper band by a lower one across the abdomen. In older children the band acts as a moral rather than a physical restraint. In younger children it is really necessary. It is sometimes sufficient to pin the night-dress to the sheet, which is firmly fixed at the sides of the bed, or to use sandbags.

4. Should extension be used at the same time? If it be used with the idea of pulling apart the diseased vertebræ, the idea is erroneous, as a very large amount of force is necessary to separate the bodies; but if it be employed to relieve the pressure between the adjacent parts of the diseased and partially collapsed bodies, brought about by the action of irritated muscles, then its adoption is rational and necessary. In the cervical and upper dorsal forms of disease a leather collar and pulley may be fixed, and a weight of one to two pounds suspended, the head of the bed being raised one to two inches. The weight also serves to fix the head; or sand-bags may be used in addition if the case is an urgent one. In the mid and lower dorsal and lumbar regions, pads of soft felt may be placed beneath the body in the region of deformity, bearing on the soft tissues at the sides of the median line, and not on the spinous processes themselves; when the trouble is lower dorsal or lumbar, extension may be applied to the legs, the foot of the bed being elevated slightly. Such measures seem to me to answer most requirements, and I have not found it necessary to use Rauchfuss' suspensory cradle, although its merits are largely dwelt on by German and French surgeons.

5. In private cases it is desirable to have a couch or bed which can be moved and placed in a carriage, so that the patient may obtain fresh air. In poorer patients a Phelps' box answers the same purpose when the acuter symptoms have passed away.

6. The choice of positions—prone or supine? In the majority of cases the supine is preferable, although it may be

replaced by the prone for a short time, to avoid bed-sores. Obviously in cervical disease where extension is necessary, the supine position alone is available. Rédard¹ strongly advocates the prone position in those dorsal cases where the deformity is commencing, where there is a good deal of irritation and contraction of the muscles, and paralysis is setting in rapidly. He claims that in four out of eight cases he obtained a considerable diminution of the prominence, and in three that the deformity was not increased. He further states that the irksomeness of the position was soon overcome, and the general condition remained good, with no loss of appetite. The prone position has certainly the advantage in that it places the congested spine uppermost; but the disadvantages of it are that a specially-constructed couch is necessary, and more continuous attention to the patient is required.

When the surgeon is satisfied that the severer symptoms have subsided, the spine is firm and the probability of abscess or other complications is slight, it is well to adopt a combination of the methods of partial recumbency and fixation appliances. This may be done by using either a double Thomas's hip splint and crutches, if the disease is low down in the spine or the patient can be firmly supported by one of the mechanical means to be detailed below. So that at first he is allowed to move about in the upright position for a few minutes daily, and the time is then gradually extended, more locomotion being allowed and less recumbency enforced; care being always taken that movement stops short of fatigue, and that during the time he is recumbent the horizontal position is strictly enforced. Various complicated arrangements are figured in books, and are in use, but I fail to see that they have any advantage either in the amount of movement allowed or support given over the simpler poroplastic or plaster jacket.

Suspension.—A few words are not out of place in dealing with this matter. It is absolutely essential in cervical disease, can be easily arranged by carrying the plaster bandages of a Sayre's jacket around the neck and forehead, leaving the face and vertex exposed. Naturally this is unsightly and cumbrous, but it affords excellent support. Or a jnymast may be fitted to plaster or a poroplastic jacket. In the treatment of out-patients I am accustomed to use a poro-

¹ *Traité de Chirurgie Orthopéd.*, pp. 244, 245.

plastic jacket carrying a stem accurately adjusted to the dorsal curve and bearing an occipital head-rest, with a sling supporting the chin.

Another method is to supplement the felt jacket by a helmet and neck-piece, so making a complete cuirass after Walsham's plan. In lower cervical caries which are approaching cure it is often sufficient to continue the poroplastic material around the neck, and still later a simple felt or Thomas's leather collar may be used.

Suggestions as to the Employment of Suspension.—

Suspension or support of the head and shoulders is necessary if the disease be above the fourth dorsal vertebra, and support of the shoulders alone if the disease be at or above the eighth dorsal. It is needful to insist upon this point, since one frequently sees cases of disease of the upper dorsal vertebræ brought to the hospital with nothing but a jacket on. The resulting increase of deformity is inevitable. In the dorsal region the natural backward curve is aggravated by the erosion of the bodies, and when the disease lies between the shoulder blades, they are separated from one another, the shoulders are displaced forward and the weight of the arms pulls the upper part of the vertebral column rapidly forward.

It appears to be a simple matter to speak so decidedly about, but its frequent neglect too often leads to serious consequences. An idea is too prevalent that for spinal disease anywhere except in the cervical region a Sayre's or poroplastic jacket is sufficient. Support, and in early cases backward traction of the arms are most essential to prevent unnecessary deformity of back and chest.

Fixation and Supporting Appliances and their Principles and Tests of Efficiency.—1. All complicated arrangements are to be avoided. In the plaster of Paris jacket properly applied, and to a considerable extent in the poroplastic jacket, all the needful requirements are fulfilled.

2. They must firmly fix the site of disease.

3. All weight must be taken off the affected region by transference of pressure from diseased to healthy spots.

4. They must be comfortable, cleanly and readily removable.

5. Pressure on the skin and chafing must be avoided.

6. They must be inexpensive and such as can be readily applied by the surgeon himself.

Advantages of Plaster Jackets.—1. When properly applied they are efficient in suitable cases.

2. The surgeon is independent of the instrument maker.
3. They cannot be removed at the whim of the patient.
4. Their cheapness.

Disadvantages.—1. They are apt to be uncleanly.

2. They become loose and badly fitting after a time.

3. They are apt to irritate the skin, especially over the prominences.

4. The condition of the back cannot be watched.

5. If a discharging sinus is present it is difficult to keep it antiseptic.

Poroplastic Jackets.—These were introduced to supersede plaster of Paris.

Advantages.—1. Lightness and porosity.

2. Easy application in skilled hands.

3. Durability; they last for a year to eighteen months.

4. They permit greater cleanliness and allow the skin to be watched, and so chafing is prevented.

5. They set more rapidly than plaster and hence fixation is complete before release from suspension.

6. The plasticity, taking the shape of the figure exactly.

7. The same jacket can be remolded as often as necessary.

Disadvantages.—1. They are somewhat costly and out of the reach of poor patients.

2. They require considerable skill in adjustment, as they set so rapidly.

3. They are weak on the anterior aspect of the chest and over the crests of the ilia, i. e., two fixation points are not sufficiently firm.

When May Treatment be Dispensed With in Spinal Caries?—1. The absence of pain is no test, since pain naturally ceases if a support be worn, but if pain ensues on removal of the support the jacket must be put on again.

2. When the spine is firmly fixed and the deformity has remained stationary for some months.

3. If a recession of the deformity has been gained and maintained for some months.

4. If a compensatory lordosis just below the kyphosis is well established.

5. Dorsal caries is very rarely cured in one year; cervical and lumbar may require less.

6. If the improvement in the general health is sustained.
7. Supports must always be worn much longer in tubercular cases. If the support has been worn too long the muscles atrophy rapidly. In any case begin to dispense with the support gradually, especially if the patient is increasing in weight. (Ryan.¹)

NOTES ON THE TREATMENT OF STATUS EPILEPTICUS.

By L. PIERCE CLARK, M.D.,

First Assistant Physician at Craig Colony, Sonyea, N. Y., Member of the New York Neurological Society, etc.

ALMOST all unsupported statements lacking in detail, relative to the success of any medication in epilepsy, have come to be looked upon with incredulity and suspicion; we are, therefore, loath to advise any one in the treatment of the disease, as it has so often proven more than a master for any remedy, but in selecting any plan of treatment for this disease we can not well afford to wait until we have one which may be absolutely guaranteed to be certain in its effects upon epilepsy. Probably no symptom found in epilepsy is at once so awful in its appearance to the clinician and difficult for treatment as that of status epilepticus. The elevation of temperature, extreme physical prostration, and the corresponding depression upon the whole vascular system renders it a state demanding the most urgent and immediate treatment.

"The fallacy of analogy" applies here with great force whenever we attempt to compare status with a single seizure or any reduplication of a simple seizure. Of course, both conditions are but manifestations of the discharge of nervous energy, but beyond this we cannot hope to draw parallels between the two symptoms. Any one who has carefully watched many attacks of status epilepticus cannot help but see how great an error is made when pathologist, after examining the brain of such a case, calls the lesions which he may have found there those which really underlie the epilepsy itself. Such observations cannot be relied upon to give us a true knowledge of the pathogenesis of epileptic seizures.

¹ Trans. Amer. Orth. Assoc., vol. II, p. 223.

Since the opening of Craig Colony for admission of epileptics many cases of status epilepticus have occurred, but as yet no deaths have taken place from the same.¹ Many remedies have been tried; chloral in large doses (40 to 80 grains) has been given, but little real benefit has been obtained from this drug when it has been given alone and in very large doses. It is a powerful sedative upon the whole vascular system, and especially upon the heart. It cannot help but be productive of great harm when given in very large doses, for at such times the heart is probably laboring under a heavier burden than it is ever called upon to bear in any other affection, therefore chloral should be given with extreme caution.

It is difficult to see how emetics can be of any value, offering as they do great hinderance to normal respiration. Occasionally drugs having this action have been administered, but they have been much more productive of harm than good.

Although chloroform is spoken of by many writers as being only "palliative," yet it can often be used with great advantage if used with caution, and only at such times when the seizures are about to begin. It must never be given at the sleep or stupor stage, as at such times it may cause deep coma and even death. The so-called "palliative treatment" is frequently of the utmost importance; in fact, the palliative treatment is about the only one which is of any great service in treating status epilepticus, therefore chloroform should be tried in all obstinate cases. Morphine has proven of some value when used in conjunction with other drugs, but used singly it shows a very uncertain action in epilepsy, so much so that its benefit or failure in any particular case cannot be proven until it is tried.

Nitrite of amyl is a remedy often spoken of with great favor, but the writer has never seen a case in which its administration was a benefit; on the contrary, he has often seen it do positive harm, even provoking or prolonging an attack. From his experience its disuse cannot be too thoroughly rec-

(¹) Since this article was written two cases of epilepsy at C. C. have terminated fatally in status epilepticus, but in both cases the prescription given above was not administered until seizures had taken place. In one 120 fits occurred, the other had 38 seizures before the remedy was applied. The writer now makes it a rule to give the dose to any patient having six attacks in rapid succession.

ommended. He has seen epileptics who have been supplied with nitrite of amyl pearls or small vials of the drug, which the patients have been instructed to carry in their pockets in order that they might use it whenever an aura occurred. Frequently such cases are automatic and are almost certain to perform many semi-unconscious acts which they would not otherwise do were they in a normal state. While patients are in such a state the writer has seen them upon the point of swallowing enormous doses of the drug, which if a nurse had not prevented them from so doing would have been productive of fatal consequences. Again, reasoning upon the physiological action of nitrite of amyl, its use would seem to be extremely limited in all epileptic conditions.

It is but fair to say here that in such an institution as the Craig Colony, where the proper food, exercise and hygienic surroundings are obtained, the manifestations of status in epilepsy are less severe and much more amenable to treatment than cases occurring in a physician's private practice.

The writer has not tried the various remedies recommended for status epilepticus without making some observations and experiments of his own. The prescription which will be given with this article has undergone various modifications from time to time, until it now seems to have become sufficiently crystallized to report for trial away from the Colony. No cases of status have occurred as yet at the Colony where it has not been possible to give this remedy by the mouth; indeed, all medication for that of status should be given at such times when the drug can be taken by the mouth. To any one unacquainted with the conditions of status the writer cannot urge too strongly the great necessity of the very earliest treatment possible; half the terrors of status are removed when we recognize that it is a condition demanding immediate action. If the condition is cared for at an early moment the whole organism is in a fair condition to respond to the drugs which may be given, but if delayed, enormous doses of chloral, bromide and morphine may be given without any result whatever. After treatment has been instituted by the prescription which is here given almost all cases of epilepsy have had no seizures following its administration. In a few, two or three attacks have occurred for the first fifteen or twenty minutes after its administration, but no longer. The prescription is as follows:

R	Tr. Opii Deod.....	M.	v,
	Potass. Bromid.....	Gr.	xxv,
	Chlor. Hydt.....	Gr.	xx,
	Liq. Morph. Sulph (U. S.).....		3 i.

M

Sig. One dose; repeat in two hours if necessary.

An explanation of the efficacy of this prescription might be hazarded on the following principle: The chloral and morphine are the first to act in their respective order, the chloral as a sedative upon the vascular system and especially upon the blood supply in the brain; the morphine as a sedative on the nerve cell. Following their immediate combined action we get the slower and more permanent effects of the bromide and opium upon the cerebral centers.

The writer takes pleasure in placing this prescription for status on record, in order that other physicians may try the same to determine its efficacy in all kinds of cases and under different conditions.

THE INFANT AND ITS EARLIEST MANAGEMENT.¹

By L. G. ARMSTRONG, M. D.,
Boscobel, Wis.

AS money, the transient object of life, is the live theme of the financier and writer upon economics—measured as it is in dollars and cents—how much more should the subject of good health enthuse us, as the medical advisers of our neighbors and patrons. To my mind this subject is so much greater, and of such paramount importance, that no excuse will be needed for the seemingly humble subject: “The Infant and its Earliest Management.”

Knowing the brittleness of the thread of life at the first moment of our existence, no one can be more assured of the importance of correct action at this moment than the physician. It is at this moment that the first break is made in the constitutional vigor of the growing man. It usually comes as a chill, or an acute congestion of the lungs or of the bowels. It is often dependent upon causes that could have been prevented by prompt and correct management.

¹ Read before the Wisconsin State Medical Society, May, 1897.

The sudden lowering of the temperature from 98.6 to 60° means much to the most vigorous man. How much more must it mean to the infant?

We all know that the usual temperature of the room is 65° to 70°. Hence there is no doubt as to the sudden change, it comes surely and generally disastrously to the child. In only one sense do I know of any excuse for this neglect of infant surroundings. The shock causes the child to cry at the top of its voice, and thereby inflate the lungs.

Knowing as we do the dangers in the case, can a successful and proper course of action be outlined and carried into practice? To this question I answer yes, most emphatically. To outline such a course is the sole object of this paper. To the old and experienced it will contain little that is new or novel.

The child being delivered, place it at once on its right side—do not wait to tie the cord. Having put the child on its right side, it will begin to breathe correctly—it will not turn purple or gasp—neither is it likely to attempt to cry as though in pain. Do not fan nor blow into its mouth to inflate the lungs—the child does that itself. After being assured that the child is in an easy position, deliberately tie the cord, one and three-quarter inches from the body. Use a soft silk cord of not less than six threads and about eighteen inches in length. Do not twist your string, but leave it as soft as an old-fashioned lamp-wick; it will not bruise the cord or slip off. In thirty-eight years I have not seen an instance of injury to the cord. I learned the procedure from Dr. Evans, of the Rush Medical College. Rest assured that it is as perfect as can be, so far as hemorrhage is concerned. Now take the child up carefully, and place it upon a warm oiled cloth, which has been put on the inside of the usual woolen blanket. Examine its mouth, nose and eyes, and be sure that nothing is wrong with them. Have the child carefully wrapped up by the nurse, avoid all currents of air and have the room made thoroughly warm—90° to 100° is the least—it is not warmed for the welfare or comfort of the grown people, it is for the infant, to prevent that chill, that blueness of hands and feet that is sure to come if this matter of heat is neglected.

With a soft cloth or soft sponge oil the face and wipe it clean. Now, with a little very warm water, wash the head

and then unwrap the upper half of the child, no more; oil the arms and chest, wipe carefully as before, then wash gently. Thus continue the washing to the feet. Always be sure the nurse keeps some kind of soft wrap over the parts washed. The child must be kept warm: no chill, no blueness of hands and feet.

The washing being completed, lay the child on a clean dry cloth, cotton flannel by preference. Now adjust the toilet of the cord; a cloth bandage two and one-half inches wide and twelve inches long, well oiled with sweet lard, or fresh olive oil, is best with which to carefully wrap the cord. After the cord is thrust through an opening in the square cloth, usual for this purpose, then fold the cloth nicely over the wrapped cord, and if properly done no portion of the cord is to be seen. Neither will the cord touch the body of the child, and it remains safe until the final separation on the third or fourth day.

The cord having come off, dust the navel with a mixture of bismuth and starch, or boracic acid and starch, applying a soft but firm pad of cotton cloth, two inches square and one-fourth to one-half inch in thickness, holding it firm with a flannel bandage four inches longer than the size of the body, pinning it on the side, not on the back, and in such a place that the pins can be seen without laying the child on its face. Now place a piece of soft cloth, slightly oiled, on the diaper, so that it will entirely envelop the perineum, and if the skin looks tender or excoriated, dust the cloth with the bismuth and starch powder; this prevents much trouble with the tender skin of those parts.

As for the clothing, the practitioner of the country has little or nothing to say. This luxury belongs to the doctor with a hospital. Yet advise a light weight knit shirt or flannel shirt. As to skirts, do not allow the nurse to put on a great heavy affair with a waist thick enough for a two year old child; light weight clothing is best. When it comes to the dress, insist on one with long sleeves—low necks and short sleeves have caused much more than one case of pneumonia in infants. One thing more and the child is ready to be placed where it can be warm, dry and comfortable. To keep it warm the best thing is a pinning blanket, made of two thicknesses of cheese cloth lined or padded with two or three thicknesses of cotton wadding, quilted or tied as comforters are

tied. It is not only light, but it is thick enough to protect the child from all draughts of cold air, a thing that must be insisted upon for the first ten days of infant life.

My experience is that to leave the child wet, half wiped, not dried at all, is to have a cold, blue baby, which screams against the awful cold world into which it has been forced. Specially warm and dry its feet and hands, and keep them so by wrapping the whole child in a well warmed woolen shawl or blanket. The child is to be laid in a quiet, dark corner, close enough to the stove to avoid all fears of the artificial heat subsiding during the first twenty-four hours.

In nine cases out of ten the doctor is asked what shall we feed the baby. Never for once fail to say nothing—absolutely nothing. Children never cry with hunger during the first twelve hours, but they do often cry of thirst, and to supply this thirst nothing is better than warm water. Several teaspoonfuls may be required during the first twenty-four hours. After twelve hours cause the white of an egg to be well beaten up and add a small amount to some warm sweetened water—or use some hot water poured upon a fresh cracker. One hundred babies are over-fed during the first twenty-four hours for every one baby that is allowed to go hungry. A few drops of warm brandy and water, a few teaspoonfuls of peppermint tea or anise tea may possibly be required and allowed.

Do not become unmindful of the fact that careful hygienic management of the infant is much better than a course of highly scientific drug treatment. As a rule, the less drugs the better.

Thus much has been said of babies in general, and can only be safely applied to the vigorous ones—those that live and thrive in spite of all kinds of bad management.

To the tiny, weakly midget of five or six pounds, so thin and frail that all hands are afraid to handle it, a radically different course of management is to be pursued. As a rule, the experienced doctor sees at a glance what he has in hand and at once orders the nurse to come to his aid with a well oiled cloth, in which this tiny midget is to be securely wrapped, for a few hours, until a much more elaborate lot of oiled cotton can be made ready for use.

Under no possible circumstance is this weakling to be

bathed and scrubbed, neither is it to be clothed as other babies; but take special care to prevent the cloths from drying and adhering to the body or limbs, for the first twenty-four hours.

Not only is special care to be taken as to the dressing of the child, but extra special care must be had as to the warmth and air surrounding it. Any failure is sure to end in disaster, and usually death. Dozens of such children are lost annually for want of this special precaution. There is no place known to me where a practitioner can show his skill and learning to greater or better advantage. To successfully manage such a case is to save a human life. The incubator is the modern invention that fills the bill perfectly. Yet, unfortunately, they are not at hand at the homes of our patrons, neither are all children born in maternities. You all know of such cases. You all know of families that seem to beget only such children, and who constantly pray for an heir to their fortune and a child to grace their homes. To such make yourself a benefactor and a friend, and they and the world will not say that your life and efforts were a failure.



EDITORIAL.

EMPYEMA IN YOUNG CHILDREN.

EMPYEMA in children has always been for many reasons a disease of the greatest interest and importance, of interest on account of the differences of opinion often arising as to treatment, of importance because there is always a great likelihood of the presence of pus in the pleural cavity being overlooked. Empyema in children should not be a particularly fatal affection, provided that an early and correct diagnosis is made, and that prompt measures are adopted for the removal of the purulent matter. According to Gerhardt most of the pleurisies occurring in children are purulent, and it has been estimated that fully two-thirds are metapneumonic. That the pus should be removed as quickly as possible is agreed upon unanimously, but in regard to the means to be employed toward this desirable end opinions still differ. Solis Cohen says that absorption of pus from the pleural cavity is practically a myth. Although it is possible for small effusions to be absorbed, it may be laid down as an axiom that where there is pus present the only rational treatment is evacuation. Now as to the means, the late Dr. Sturgess, of England, believed that resection of rib was necessary, and that the greatly lessened rate of mortality was altogether due to improved treatment in this respect. Some even go further, and insist on the necessity of washing out the cavity. Dr. Joseph Winters does not think that resection of the rib is indicated, but holds that incision and drainage is sufficient. He, however, is a believer in irrigation, and contends that washing out by means of hot water at a temperature of 125° or 130° cannot have a prejudicial effect. Dr. E. Cautley gave an account at a meeting of the London Medical Society, of eighty-six cases treated by various methods, which gave a mor-

tality of 16.6 per cent. The rate of mortality was about the same after resection as after incision, except that five out of six cases under two years old treated by resection were fatal. From a sifting of the mass of evidence on the subject it would appear that incision and drainage should be the treatment pursued with patients up to two years of age, and that after that period the surgeon should use his own judgment and perform resection if he deems it advisable. The death rate from infancy to the age of three years is very high, nearly 50 per cent., but after the age of three the prognosis is much more favorable. The use of chloroform during the operation is not contraindicated. Dr. Winters advises that the patient should not be fully under the influence of the anesthetic, as it is desirable that he should cough and if possible cry, so that the explosive expiratory efforts should forcibly expel the pus from the pleural sac. The most important point in the successful treatment of infantile empyema is to diagnose and operate quickly, and it is probable that a fatal issue at any age is rather the result of neglect to recognize the true nature of the case at an early period than from the operation itself. The after treatment of empyema must be left to the discretion of the medical attendant, and conducted on ordinary surgical principles. Naturally the patient should live under the most healthful conditions possible, plenty of light, fresh air, and easily digestible nourishing food. Pure air is our best remedy, and it is to be regretted that it is not more constantly at our disposal.

EDITORIAL COMMENTS.

Renal Colic in Infants.

That renal colic does occur in infants is more than likely, although there is not universal agreement on the point owing to the difficulty in diagnosing between renal and intestinal colic. Many cases have been recorded where all the symptoms of renal colic were present. It is true that no distinct calculus has been found, on the other hand abundance of free uric acid has been detected on analysis of the urine, and it is the opinion of several whose experience should entitle their views to consideration that this disease is much more common with infants than is generally believed to be the case. The affection is seldom met with among the children of the poor, but is almost wholly confined to the offspring of the rich. The conditions of life under which each class lives must be held responsible for this phenomenon.

The poor man has not the same opportunity of contracting gout himself, nor the likelihood of inheriting a gouty diathesis that the rich man has. It is one of the peculiar privileges of the moneyed man to be more prone to the formation of uric acid and to suffer from that state designated *gouty*.

Alcoholism Amongst the Young in Brittany.

According to the *Normandie Médicale* the population in that part of France is being decimated rapidly by alcoholism. Alcohol has become a part of the staple food of the home. Bread, coffee and eau-de-vie form the basis of the dinner, and frequently even coffee is absent. The most distressing feature of the case is the lamentable effect this use of alcohol has on the young. The infantile mortality is enormous, such as is met with nowhere else. Of fifty children who had come to the free dispensary of Dr. Brunon (the writer of the article in

the *Normandie Médicale*) two began to drink coffee and alcohol before they were a month old, four at three months, two at five months, five at eight months, one at ten months, five at eighteen months, fifteen at a year and nineteen at three years. With these facts staring us in the face it can no longer be a matter for surprise that the population of France is diminishing year by year, that the rural population is degenerating, that crime and insanity are greatly on the increase, and that industry is on the decline.

**Hospitals for
Children.**

The dangers attending the herding together of children in large numbers has often been pointed out, but it is a matter that will bear repetition. Hospitals for children are very laudable and necessary institutions, still the fact should not be forgotten that they have their dark side and are liable to be abused. Hospitals for infants on a large scale are often most injurious to the health of their inmates. This truth has been proved time after time, more especially in Paris. One of the largest children's hospitals in that city was designated but a short time ago as a veritable death trap. An infant should be admitted into a hospital only under very exceptional circumstances. If there is any chance of the child being nursed properly at home its parents had much better keep it there. No cases but acute ones should be admitted to a hospital, and discharge should be made immediately on recovery. On account of the great sensitiveness of the child's organism, the young should live under the most healthful possible conditions. Pure air is more important for the maintenance of the health in children than in grown up persons. A child, whenever it can be avoided, should not sleep in the rooms in which they remain in the day time. Where children are together in large masses diseases are liable to break out without any apparent cause. Female children who are long in a hospital often suffer from severe vaginitis. An epidemic of dysentery was traced at Bonn asylum to

the drying of children's clothes in the nursery. But cases demonstrating the extreme sensitiveness of young children to infection can be multiplied without number, and enough has been said to emphasize the point that hospitals for infants should be regarded with a certain amount of distrust.

**Derelict Children
and Child Traffic
in Italy.**

The outlook for the children of convict parents is sufficiently bad in this country, but it is infinitely worse in Europe, where money is scarcer and the struggle for bare existence keener. In fact in Italy and in other Latin countries it is not only the children of criminals who need fear a life of abject poverty and under the hardest possible conditions. Many of the street arabs accompanying the itinerant organ grinders to be seen in the large towns of this continent and to a greater extent in European towns, have been stolen from their homes, or what is quite as likely, sold by their parents. Brutal callousness to all natural feelings, induced by ever grinding poverty, is responsible for this unhappy state of affairs. Various and persistent attempts to put down this iniquitous white slave traffic have been made, but with only partially successful results. The efforts are baffled by the parents of the children themselves, and in spite of government interference and philanthropic societies this scandalous trade still flourishes. The only remedy for the evil is in uprooting the outgrowth of its origin. Italy herself, with her frightful poverty, combined with ignorance and defective education, supplies inducements for child traffic stronger than can be dealt with by legislative means.

SOCIETY REPORT.

PHILADELPHIA PEDIATRIC SOCIETY.

Stated Meeting, May 11, 1897.

Enlarged Spleen.—Dr. HAMILL exhibited a boy six years old with enlargement of the spleen, probably of specific origin.

DISCUSSION.

Dr. F. PACKARD.—I should be inclined to agree with Dr. Hamill in regard to the syphilitic origin of this condition of the spleen, but I must say I do not think that we can rule out the influence of rickets. To my mind the rosary is sufficiently distinct to cause us to take that into consideration in regard to the visceral changes. In cases of enlargement of the spleen in the young we always have to think of syphilis, particularly inasmuch as Ball and Fox state that in almost 45 per cent. of cases of inherited syphilis the spleen was enlarged and in about 50 per cent. of enlargement of spleen syphilis was present, so that the connection must be an extremely close one. Do you think it possible that there could be amyloid change in the spleen and liver accounting for enlargement of both these organs? Of course the only way that we could judge about that would be the previous history of the case; the failure of involvement of kidneys would be against it. I do not think the element of rickets can be entirely overlooked.

Dr. S. M. HAMILL.—The rosary does exist to some extent. The rhachitic manifestations are, however, not very distinct, and this is practically the only one which is very evident. For this reason I am inclined to exclude rickets as a causative factor. I do not think amyloid degeneration exists, because the child has been absolutely healthy, with the exception of an attack of epigastric pain which he had two years ago. The mother says he has been an unusually healthy, active boy. He was brought to me on account of vomiting of blood from which he suffered six or eight weeks ago. Since his recovery from that he has been feeling perfectly well.

Dr. S. W. MORTON read a paper upon **Multiple Paralysis Following Measles**, in which he reports an illustrative case.

The case in brief was as follows: Jos. P—, æt. two years and eight months, with family history negative with exception of frequent rheumatic neuritis in case of his mother, had been free from any disease whatever until this attack, which presented the characteristic symptoms of measles, and seemed, up to the fifth day, to be a simple but vigorous case. On this day there was present evident dysphagia, hyperesthesia and pain on movement. These all increased for several days and then gradually subsided, but were not absent until the fifteenth or sixteenth day of the disease, and were then followed by rapidly increasing paralysis and some anesthesia. The temperature on the fifth day registered 105° F., continued between this and 103° F. until the ninth day, when gradual defervescence began, normal being reached on the seventeenth day. Patient was very irritable from the fifth to the fifteenth day, crying at every mouthful of food or medicine, or on the slightest touch of his skin or movement of his head and limbs. He swallowed his food slowly and with evident pain. He spoke to no one from the fifth to the twenty-eighth day after disease, at first possibly for fear of pain it would cause, later because he found it impossible. The nose and throat were examined repeatedly for lesions, but none but those of acute catarrhal pharyngitis and rhinitis were present. The urine was febrile and showed a trace of albumin but no casts on the fifteenth day. Mind was clear with exception of delirium present when temperature was upwards of 105° F. Medicines used were Tr. Aconite root, Spts. Aetheris nit., Neutral mixture, and Phenocol.

By the twenty-second day it was observed that he had not grown in strength as one would have expected with the establishment of his appetite and other functions, but as his mother put it "has grown weaker as he grows better." As he lay upon his couch his head was found to be on one side or the other, the arms and legs remained where they were placed and when raised the hands and feet dropped, but he did not cry when handled as he did when feverish. He tried to speak but could utter only an unintelligible whisper—gave his assent by a nod of the head. When placed in a sitting position his head fell upon his shoulder and his trunk muscles were too weak to support him.

By the thirty-first day he had grown still weaker. Legs,

arms and neck were wasted, could flex knees slightly, moved hands slowly, grip feeble and uncertain. Knee-jerk was abolished. Muscles of arms and legs did not react to faradic current. Did not seem to have usual pain on its application. Mind perfectly clear. Can say rather indistinctly "no," "yes," and "papa."

At the end of the seventh week could walk if held under arms, but could not hold his head erect. Hands and feet still drop when the arm and legs are held out. Grip still quite weak and uncertain. When he walked his feet were lifted high as is done by an infant beginning to walk. Knee-jerk was still absent. Faradic current produced contraction in flexor muscles of legs and arms but scarcely a tremor in the extensors. In order to fix his vision upon an object requiring him to turn his head, required two or three jerky movements of the head. Speech was still slow and indistinct, but few words having been added to his vocabulary. He swallowed his food slowly. While his appetite, sleep, etc., continued good he gained power in speech, arms and legs very slowly, especially in his speech, so that four months after the measles began his condition was as follows: General appearance, that of perfect health, but on his feet he was uncertain, often staggering as he ran. Grip still weak and uncertain. Speech but little improved. Patellar reflexes established. All muscles of arms and legs react to faradic current. Was slow in swallowing as well as in speech. Could not speak as clearly as his younger brother.

Improvement continued, but was very gradual and slow, so that at the expiration of one year from the time of attack of measles he was still weak, unsteady in his gait and tired much more easily than his little brother. His speech was still very defective. Could not articulate as well as his little brother nor nearly as well as he could before his illness began. Still could not fix his gaze upon objects requiring a turning of the head without the jerky movement above referred to.

In substantiation of the diagnosis of measles the fact was mentioned that his two brothers came down with measles from sixteenth to twentieth day of his disease.

The following facts were noted as unusual: The temperature did not subside as is usual with the fading of the eruption; speech was absent from the fifth to the twenty-eighth day;

there was hyperesthesia and muscular soreness followed by anesthesia and paralysis, and all these in a case of measles otherwise not violent or apparently complicated.

The possibility of mixed infection was considered. Diphtheria was eliminated by the absence of false membrane and the remoteness and slightness of the albuminuria, also by the time at which the paralysis began.

The author expressed the opinion that it would conduce to accuracy of diagnosis if all cases of infectious fevers presenting unusual symptoms were made the subject of bacteriological examination of the throat and nose.

The elimination of scarlet fever from the case was looked upon as much more difficult, but its decided improbability was based upon the absence of any variation in the rash from that of an ordinary attack of measles, the absence of alteration in the character of desquamation, the absence of the strawberry tongue and the presence of only a trace of albumin, which would have been probably much increased by the presence of scarlet fever.

Influenzal contamination was thought of, but considered improbable because of the absence of more pronounced catarrhal symptoms and catarrhal complications, e. g., pneumonia.

Rheumatic neuritis was considered a plausible complication, and especially because of the frequency of this disease in the child's mother.

The most plausible solution was thought to be that there was in this case a polyneuritis, the result of a poison generated in the system of all cases of measles but acting in this case upon nerves especially predisposed for granting this. It became easy to account for the prolonged fever, dysphagia, hyperesthesia, muscular soreness, anesthesia, loss of reflexes, paralysis and loss of power of articular speech.

Reference was made to Leyden's brochure upon "Multiple Neuritis" published in 1880, in which he is said to have classed such cases as "Infectious Multiple Neuritis," saying: "The infectious form follows acute infectious diseases, such as diphtheria, typhoid fever, smallpox, scarlet fever and measles; also pneumonia, pleurisy, septicemia and erysipelas."

Osler was quoted as classifying these cases as "Post-febrile Polyneuritis," and as saying, in the *American Text Book*

of Medicine, that, "following typhoid fever, smallpox, measles, and scarlet fever, a neuritis may be limited to the nerves of the legs, producing a paraplegia, or in some instances may cause widespread loss of power and rapid wasting, so that the cases are very often regarded as acute or subacute myelitis."

H. C. Wood was said to consider these cases as "post febrile multiple neuritis," and the following quotation was taken from Wood and Fitz's *Practice of Medicine*. "The neuritis which follows exanthematous disease most frequently attacks the legs and is not rarely limited to the nerves of one leg."

Rotch was quoted as saying that paralysis following measles is a rare sequel and that it is generally paraplegic in type.

DISCUSSION.

Dr. H. B. ALLYN.—There does not seem to be any doubt that it was a case of multiple neuritis which followed measles. Most of the cases of measles in which neuritis, or any form of palsy, has followed, have occurred during convalescence, and most frequently from the latter part of the first to the end of the third week. One feature that strikes me as a little unusual is the persistent high temperature in this case; it is apparently to be explained by the extreme toxemia developed by the measles. The temperature continued at 103° and 104° at a time when one would expect a fall; but I presume the high temperature must have been due to intensity of the poisoning, and if the poisoning was intense it is not difficult to understand why there should have been such widespread neuritis.

It is well understood that peripheral neuritis may follow any of the infectious diseases. Case have been reported following tuberculosis, leprosy, syphilis, septicemia, and quite a number of cases have been reported following scarlet fever, smallpox, typhoid fever, pneumonia, and as in Dr. Morton's case, measles.

In the paper on paralysis following measles, which I wrote in 1891, there were 41 cases collected from the literature and several cases were overlooked, notably the cases of acute poliomyelitis following measles reported by Sinkler, and some cerebral palsies reported by Sachs and Peterson. In the majority of these 41 cases the palsy seemed to be cerebral in origin. Of the cases that were then classed as spinal, how-

ever, I have no doubt that several were cases of peripheral neuritis and not of spinal origin. For example, a case of Perret's may have been an example of both peripheral and spinal palsy. The cases of Bergeron and Liegard, of ascending paralysis, may have been wholly peripheral, if the pathology of Ross and Bury be adopted.

The pathology of neuritis following infectious diseases is interesting. In recent years, since more attention has been given to neuritis, many of the cases formerly looked upon as inflammatory or degenerative must be regarded as toxic in origin. One of the cases I collected, that of Sebeper, was probably toxic; coma persisted for three days, and when this disappeared the child (eight years old) was unable to speak; nevertheless recovery was remarkably rapid. The very rapidity of recovery, or if not the rapidity then its completeness in cases of paralysis following the infectious diseases, seems to indicate that the cause is really toxic and not degenerative or inflammatory. Gowers gives the most frequent cause as thrombosis. There is one case following measles in which there were infarcts in the spleen and liver, and a focus of softening in the brain. In this case the cause was almost certainly embolism. The lesions formed at death in chronic cases are of no value in explaining acute conditions. Whether the toxine acts by destruction of blood vessels, thus permitting of hemorrhage or serous oozing, or whether it acts upon the nervous tissue or upon the motility of the neurons is pure conjecture at present.

Dr. A. A. ESHNER.—The failure of speech noted in this case is an interesting symptom, which may be explained as a part of the multiple neuritis. This defect seems not to have been aphasic, and it may have been due to an inflammation of the hypoglossal nerve, or perhaps of the tongue itself. It would be interesting to know whether or not there was evidence of paralysis of the palate or of the pharyngeal structures.

Dr. MORTON.—It is my opinion that the reason the child did not speak from the fifth day on was that he was experiencing, every time he spoke or swallowed, excruciating pain. The moment anybody would come into the room he could begin to cry, especially when the doctor appeared, if his mother stayed out of the room; he would indicate that he was pleased when the shutters were closed, and my idea was that it was a painful

muscular condition due to the same cause as was the general muscular soreness and hyperesthesia; even to this day the child cannot say more than bi-syllabic words and says most of these very indistinctly, so I supposed the early absence of speech was due to the early stage, the inflammatory stage, of the neuritis and the pain and tenderness attendant upon it.

There is one other thing to be explained, viz., the slowness in recovery. It is due to the fact that he has had no treatment all winter; the treatment was stopped the first of October, and he has had no treatment of any kind since, and his surroundings at home are not very good, hence I think it is easy to account for the fact that he has improved very slowly.

A Case of Green-stick Fracture of the Inferior Maxilla, with Photographs, was reported by Dr. J. M. BROWN.

DISCUSSION.

Dr. ROSENTHAL.—I saw, with Dr. J. Madison Taylor, a very peculiar case in a little infant that had fallen on its head and had a depression of the skull. It was probably half an inch in depth when we saw it three or four days after it had received this injury. This depression gave no evidence of any compression of the brain, and has slowly receded into the normal contour of the cranium.

Dr. STRECKER.—Some weeks ago a case of green-stick fracture came under my observation. The child had fallen, and a diagnosis of sprain was made by the attending physician. Four months afterwards I took a skiagraph, which shows green-stick fracture of radius and ulna.

Dr. BROWN.—Since the occurrence of this injury my attention has been more particularly directed to this portion of the skull. I can see no reason why this could not occur, and yet the more complete fracture is what does occur. There was a question that arose in my mind concerning the injury or deformity as shown in the smaller of the photographs, that is the possible revolving of the condyles inward on the planes of the glenoid fossa. I have had an opportunity of making but a very limited study of the skulls of children since that occurrence. At first I was firmly convinced that such a change in the position of the condyle could take place. Later studies seemed to render me doubtful as to this question, but I think

if it does occur, or can occur, it is more likely to occur in that class of skulls which are shallow and wide. Taking the brachycephalic skulls, the protruding nose and jaw-bones, the skull that has a greater length from the chin to the occiput, I think this fracture is not so likely to occur. In the other class of skulls the glenoid fossa seemed to have a greater depth than the proportion of the condyles. The condyles apparently moved inward in this case.

A Clinical Report of a Case of Infantile Scurvy.—Dr. D. J. MILTON MILLER reported the following case: Male, 10 months old, colored, lived amidst most unfavorable hygienic surroundings. It was fed on condensed milk and boiled cow's milk for the first weeks of life. Then, until brought for treatment, it was fed exclusively upon oatmeal gruel, a period of eight months. It was fretful and tender to touch, with bleeding and swollen gums for two weeks before admission. When brought to the dispensary the child had bleeding and swollen gums (over incisor teeth); swelling of both forearms above wrists and of both ankles. Handling of these parts caused screaming. There were no ecchymoses. These symptoms yielded quickly to orange and beef juice and fresh cow's milk.

Attention was called to the rarity of this disease among dispensary patients, the writer having found but 20 instances in a collection of 91 American cases, and to the increasing frequency of the affection, which seems to be coincident with the introduction of sterilized milk and the enormous number of proprietary foods placed upon the market during recent years.

Dr. E. E. GRAHAM.—I wish to corroborate all Dr. Miller has said, except his views as to the frequency of these cases. I believe many cases recognized in recent years have not been reported. In my own children's clinic I see three or four cases yearly, the most of them not as well marked as Dr. Miller's case. I believe with him that it is frequent among the better classes rather than the poor. These cases are, I think, not uncommonly mistaken for rheumatism or some form of cerebral or spinal disease. I have seen three cases that were mistaken for either cerebral or spinal trouble, curiously enough, in the family of a physician. I think scurvy is quite a common disease, less common in the milder manifestations than as the well-marked disease. The fact that children rarely develop marked cases is, of course, due to the fact that children

are seldom kept on a proprietary or unsuitable diet after the marked symptoms develop.

Dr. ROSENTHAL.—We see quite a number where I practice. Most of our cases have bleeding gums, but do not show the profound symptoms Dr. Graham speaks of. These people have a method of feeding their children from very early life on zwieback, a food similar to toasted sweet bread, nothing else, not even milk, for a time. After three or four months of this diet, the children show signs of scurvy. These children, after they recover from scurvy, become rickety, and it is quite a time before they get well. By the time they reach the age of five years they have usually become healthy.

Dr. GRAHAM.—In speaking of my cases I referred more to the pain that the children suffer from the swelling that occurred in the extremities, the continued fretfulness and cries of the child leading the parents naturally to suspect the presence of some cerebral or spinal lesion, not to any delirium or symptoms of that character.

Dr. CLARA DERGUM.—I reported a case three or four years ago in *The Medical and Surgical Reporter*. The child in that case had been fed for one summer on peptogenic milk powder and milk and cream sterilized. It had been suffering from bowel trouble. The child was apparently well in the fall, and I vaccinated it. We attributed the fuss that it made about being taken up to the vaccination on the leg. I did not see the case for two weeks, when I was sent for and found the child with a temperature of 106° . The vaccination had not healed; there was a rough, ugly surface, with occasional bleeding for some time. I examined the child carefully and noticed it had swollen gums and a few purpuric spots on the body; pain on lifting the child was marked. Immediately I recognized the condition and the child was placed upon appropriate treatment; the high temperature worried me considerably, being 106° , although it did not remain that high very long. It was placed upon dilute sulphuric acid, orange juice, and beef juice, and made a very rapid recovery. The vaccination was quite a long while healing up and bled every now and then. Perhaps vaccinating the child might have precipitated the attack, but this case does show that children cannot be fed upon sterilized milk any length of time. This child had an appropriate food, so far as we could think of, for the summer

months. It was under good hygienic conditions and had been at Atlantic City most of the summer.

Dr. GRIFFITH.—I agree quite thoroughly with Dr. Miller about the rarity of these diseases in dispensary practice. I have watched for them carefully for a number of years and I have never seen but one case, and that is the case reported by Dr. Miller to-night, although I have had a chance to observe many children at both the University and the Children's Hospitals. I am being brought pretty well to the conclusion that there is no one article of food which we can say is the special cause of scurvy. I mean by that we cannot say that it is necessarily proprietary food, or that it is necessarily sterilized milk which produces the disease. The occurrence of scurvy is simply an indication that there is something wrong with the food for *that child*, although it may be the proper food for another child. That is the reason one child thrives upon oat meal and another develops scurvy; some children get scurvy on sterilized milk, and a lot of others do not; some develop scurvy on proprietary infants' foods, and others escape it. This statement has, of course, nothing to do with the question of the best food for infants or the one most liable to cause scurvy. I might also say in this connection that a committee has been appointed this year by the American Pediatric Society to take up the collective study of infantile scurvy, as another committee has of diphtheria for the past two years. The Society wishes to send out questions to all who have seen cases, for the purpose of studying what the causes are in the production of infantile scurvy, and I shall be very glad, when the circulars are ready, to send them to any one who will let me know that he or she has had such a case.

Dr. BROWN.—I think that Dr. Starr reported a case following the first epidemic of the grippe, in which he thought the grippe was an influential factor in the causation.

Dr. MILLER.—As to the rarity of dispensary cases, I found very few cases reported, and on inquiry among my friends, not only in dispensary practice, but among the same class of private patients, it appeared to be equally rare. I think the point taken by our President is a very good one, that it is a food not suited to a particular patient that causes scurvy. I should rather put it that it is the want of a varied diet. We all know that prior to ten years ago condensed milk was an

extremely popular food in this city. Dr. Albert H. Smith, who had an enormous practice among well-to-do people, prescribed condensed milk to almost all his patients. Hundreds of babies in this city were brought up on condensed milk, and yet scorbutus was very infrequent. I think the reason scurvy did not develop in the period referred to was because at that time children were put upon a varied diet much earlier. Children now are brought up more carefully than they were, owing to the teaching of physicians, and particularly to the publication of books on the domestic management of children, and the result is that they are kept upon an unvaried diet until a much later period than they were formerly. I believe among recent writers, the only one who denies that food has anything to do with infantile scorbutus, is Ashby, of Manchester. He contends that scurvy is simply a hemorrhagic diathesis, an exaggeration of the anemia which occurs in rhachitis and certain dyscrasias of children. He supports this view with quite a number of cases in which scurvy has developed in very young infants who have eaten potatoes, which are supposed to have especial anti-scorbutic qualities; but I think the fact that scurvy develops in children who do not have rickets or any other dyscrasia, although a great many of them do, and so often follows the use of a preserved food, militates very strongly against this view.



PRACTICAL NOTES.

Broncho-Pneumonia in Children.—Dr. P. E. GOLD, of Sipe Springs, Texas, writes that he first attempts to quiet the restless patient with sponge baths of moderately cool water or with Dover's powder, alone or combined with acetanilid, according to the indications. He next regulates the bowels with the mild chloride of mercury, in divided doses, so that the child will have about three stools in twenty-four hours.

When poultices are indicated he covers the chest with flannel cloths, ten inches square, which have been wet with hot water and wrung out. These are changed every five minutes, and the patient gets every benefit from the moist heat of the poultice without the disadvantages of the ordinary heavy poultices.

He rubs the chest at least once a day with a mixture of lard and turpentine. He does not use alcohol unless the patient becomes weak and clearly needs it. Aromatic spirits of ammonia or strychnine in minute doses may at times be indicated; shot-gun prescriptions do much harm and simple remedies should be used as much as possible.

Antipyrin in Chorea Minor.—NEGRO has employed in chorea minor, antipyrin, with the best results. He gives it to children five to seven years old in daily doses of 0.8 to 1.0 grm.; to those ranging from eight to ten years, in a daily dose up to 2 grm. In older children he increases the dose to 3 grm. a day. The drug was, as a general rule, borne well; Negro, however, always allowed three to four days to intervene before repeating the remedy. The following is his formula :

R	Antipyrin.....	10.0
	Aquæ	200.00
	Syr. cort. aurant.....	50.0 Mix.

This treatment is continued for a month; then arsenic and iron preparations are prescribed until the cure is complete.—*Gazz. degli ospedali*, 1896, p. 29.

In the Treatment of Hereditary Syphilis in Children the following methods are recommended: For a child six weeks old: twenty drops of Van Swieten's liquid (corrosive chloride of mercury, 2 grains; alcohol, 3 drams; and distilled water sufficient to make four ounces) four times a day, and at the

same time inunction with one-half to two grammes of mercurial ointment. The inunction must be made in those parts which do not absorb too readily, and which are not thickly covered with hair. Make the inunction at night and cover the parts with cotton. The child should also be bathed twice a week in starch water. Continue this treatment without interruption for five or six months, increasing or decreasing the doses only as needed. One-quarter, one-third, or one-half a teaspoonful of Gibert's syrup (hydrarg. biniodid., gr. iii; potas. iodid., gr. cii; water 3 iii; and syrup, q. s. ad. $\frac{3}{4}$ x) should be administered four or five times a day in a bottle of water. The following prescriptions are given for sublimate baths, which should, however, be avoided when ulcerative affections are present.

℞	Hydrarg. bichlor. corros.....	3.0
	Alcohol.....	30.0
Ft. Sol. Sig.—To be added to a bath;		
	or,	
℞	Hydrarg. bichlor. corr.....	4.0
	Ammon. mur.....	6.0
	Aquæ	2500.0

Mix. Ft. Solutio.

Sig.—For a bath of ten minutes' duration (every second day).

When the slightest intestinal irritation is observed, the baths are to be omitted; and if diarrhea continues, the mercury by the mouth must also cease. The inunctions should, however, be continued.

Indirect Treatment.—Administration of mercury to the mother or wet nurse; if these latter are suffering with syphilis, iodide of potassium should be given by the mouth and mercury by inunction. Mucous patches should be touched with the nitrate of silver stick. Ulcerations with phagadenic water (corrosive subl., 0.25; Aqu. 100.0). Enlargement of the bones should be treated with mercurial plaster.—*Arch. f. Dermat u. Syph.*, xxxviii, 287.

On some Complications of Lung Tuberculosis in childhood, CusTOM has the following to say: Hemoptysis is a rare symptom of tuberculosis in childhood. The author related a case of tuberculosis in a child sixteen months old, which had only been diagnosticated a few days before death, and which died from a hemorrhage. This case confirms the views of

Rilliet, Barthez and Smith, according to whom hemoptysis is met with nearly exclusively in cases of progressive tuberculosis of the glands, pneumothorax is not as infrequent a complication of tuberculosis in children as is hemoptysis. The latter is usually the sequela of a cheesy broncho-pneumonia. He also related two interesting cases of pneumothorax from his personal observation.

Tuberculosis.—CURASSO advocates a new method for the treatment of tuberculosis of the lungs, which consists in the inhalation of oil of peppermint and the internal use of creosote. Small pillows, 5 cm. long and 2 cm. wide, have 4 to 5 drops of the oil of peppermint poured upon them every three to four hours, and are fastened under the nostrils by means of bands passing over the ears. These are to be worn continuously night and day. After taking six or seven deep inspirations, the patient is allowed to rest one quarter of an hour, during which time normal respiration is continued through the pillow. As the pillow may become disarranged during the night, fifteen drops are to be poured on the pillow on which the child sleeps.

Novel Method of Irrigation in Empyema.—ZEMAN (*Rev. de Therapeut.*, May 1, 1897) has treated a number of cases of empyema with fistula by warm baths. If the fistulous opening is below the level of the fluid, it is evident that if the patient inspires and expires freely there will be a current of water into and out of the pleural cavity much stronger than can be obtained by simple irrigation. Clumps of coagulated blood and fibrinated masses are by this means washed out which could not have been obtained by simple lavage. The baths were given in boiled water cooled to the temperature of the body, and lasted ten or fifteen minutes. The general condition of the patients was much improved, and no accident was observed to follow this treatment.—*Med. News.*

Mixture for the Treatment of Streptococcic Sore Throat in Children.—

R	Tincture of strophanthus	} aa	. m. x.
	Anisated spirit of ammonia		
	Distilled water		

M Sig.—A teaspoonful every two or three hours (for children from ten to twelve years of age).—*Professor von Widerhofer.*—*Med. News.*

ABSTRACTS.

HARELIP.

A. M. PHELPS (*Post-Graduate*, 1897, xii, 230). The paramount object in a harelip operation should be not only to close the fissure, thereby restoring the function of the lip, but also, so far as possible, to make a perfect lip in appearance by removing the deformity. A scar extending on either side of the median line from the flattened nostril to the margin of the lip, terminating in a notch, or in an undue fulness at that point, is an unsightly deformity. If the operator succeeds in avoiding the notch, or a fulness at the margin of the lip, the scar being on one side is much more a deformity than when

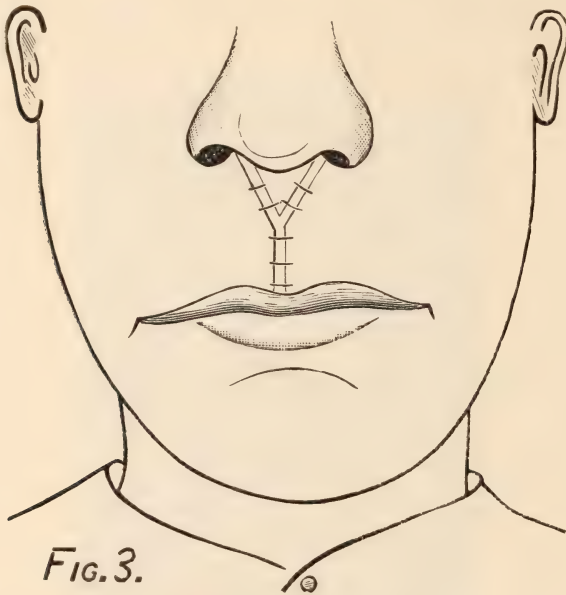


FIG. 4.

left in the median line of the face, and in males, will mark the point where the mustache must part (see Fig. 4). The parting of the mustache on either side of the median line after the common operation for harelip gives to the face a decidedly comical appearance which all have observed. Then again, the operations for double harelip, as generally performed, leave the face in much better shape than those for single harelip, unless the bones of the face are deformed.

The above facts are what prompted him to attempt an operation which would throw the scar in the median line of

the face, avoid a flattened nostril, and make a perfectly artistic lip; that is, a lip whose margin will describe a graceful curve from either corner of the mouth to the center, where it will terminate in a prominence as seen in Fig. 3. The steps of the operation are briefly these: After first passing a loop through each angle of the lip for the forefinger of the left hand to hold perfectly the parts, with a pair of curved scissors separate the lip from the attachment to the jaw sufficiently to relieve the nostril and make all parts easily movable. With an ordinary cataract knife, or a slender sharp tenotome, puncture the lip at 1, following the dotted lines, describing a curve to 2, and from thence to 3, see Figs. 1 and 7; withdraw the knife after cutting freely into each nostril at 3, Figs. 1, 2, 5 and 7,



and with a scalpel cut from 3 to 4 through the entire thickness of the lip. Pieces B and B are now turned downward, leaving the V-shaped pieces seen in Fig. 2. Introduce the silk sutures, as seen in Fig. 2, after which cut away the pieces B and B, when the result will be seen in Fig. 3. After cutting away the pieces B and B, pull the loop up, stitch the mucous membrane up with catgut as far underneath as possible. Enough tissue should be left in the median line to compensate for retraction. The temptation is to cut the pieces B and B too short; it is better to cut them long, and if necessary trim them a little.

This operation can be performed in all cases of single hare-

lip where one-quarter of the lip remains between the fissure and the corner of the mouth. The curved incisions on either side of the mesial line (see Figs. 1, 2, 3) should be an equal distance from each corner of the mouth, the curves should be similar, and both nostrils entered at the same point on each side. The nostrils should be freely liberated from the superior maxillary bones, allowing the nose to slide freely. The "V" in the center should be about one-fourth to one-half the normal width of the lip. Should the "V" piece be cut a little too short, it would then be necessary to make transverse incisions around the alæ of the nostrils. This leaves no scarring, but would never be necessary except in the case of the "V" being cut too short. If this center "V"-shaped piece is too long, it would leave an unsightly deformity. Now, these

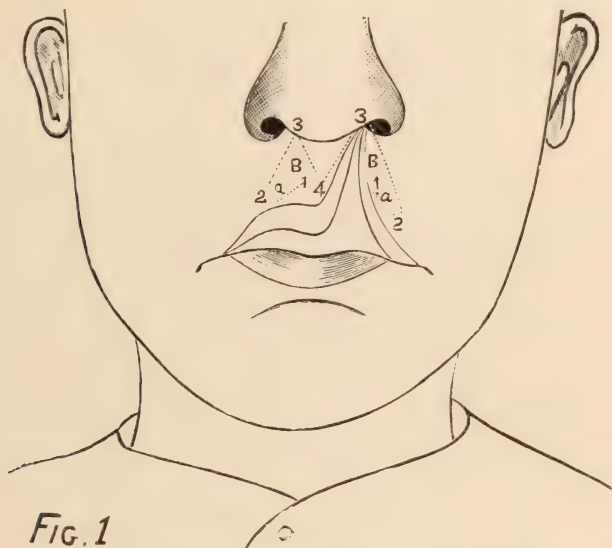


FIG. 1

steps which are followed in single harelip, with this deeply curved incision, instead of a Malgaigne's incision, throw the scar in the center, and give a proper width to the lip, forming an artistic curve, ending in a point at the center. These same incisions should be made in cases of double harelip, saving the center from which the "V" is made (see Figs. 5 and 6). Fig. 6 gives a fair representation of an extreme double harelip operated upon by double curved incisions, utilizing the center piece.

Now, the advantages of this operation will become apparent by referring to Fig. 3. They are: (1) an artistic lip; (2) a straight scar in the median line; (3) there is but little more tissue sacrificed than in any other method, and but little more

division of the mucous membrane, and both sink into nothingness compared with the advantages derived.

The points of originality claimed, should they be entitled to such consideration, are: (1) a double curved incision, throwing the scar into the median line, and (2) making a natural artistic curve of the border of the lip by the means above described, which cannot be obtained by any other operation for single harelip.

The advantages of the double curved incisions over Malgaigne's are: (1) uniform unfolding of the curved parts in such a manner as to allow each to join the fellow of the opposite side, closely and smoothly, curved surfaces meeting curved



surfaces; (2) the white line above the vermillion border of the lip describes a curved line down into the center point; (3) there is not so much sacrifice of tissue. A single curve, as in Malgaigne's, would not give the width to the lip in the center, without sacrificing so much of the lip with a deep curve, as to make the operation objectionable. The scar in single harelip, which branches from the center and extends to the nostril, from this location is hardly noticeable, and only so in cases where the "V" is left too long.

The mechanical principles are illustrated in the following cuts (see Fig. 5 a). A curved line (1-2), when straightened, carries the point 2 a line below; make the curve a little deeper

(*b*, 3-4), and straighten it, and it carries the point 4 two lines below. Double the curve on itself (5-6, *c*), and straighten it, and the straight line will be carried to 6, three lines below. A straight line (*d*, 7-8), when swung to the center, will not fall

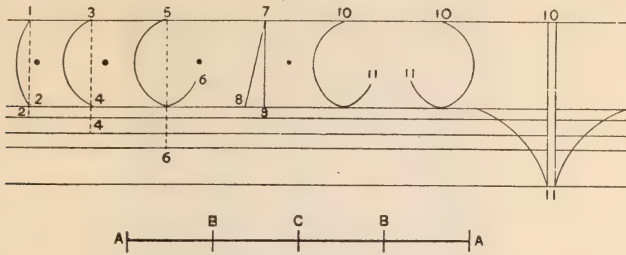


FIG. 5.

far below the top line. Now make two double curved lines (*c*, 10-11) straighten, and unite them, and a projection will be made at *f*, 11-11. If a center Y-shaped piece is interposed (Fig. 6 *h*, 14) and the curves straightened and united to it (12-

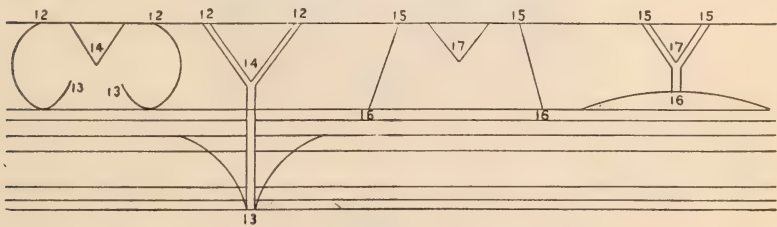


FIG. 6.

13; *i*, 13), will still become a little more prominent. Straight lines (15-16) united to the centerpiece. (17 *j*) would make a notch (*k*, 15-16-17). Now, it is apparent that if these double-curved lines are followed in making the incision on either side

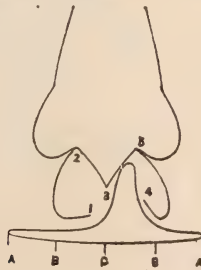


FIG. 7.

of the notch, a great prominence of the border of the lip will follow, and a notch avoided; and such incisions should always be made in double harelip, and the centerpiece cut in the shape of a V. This will result in the formation of a promi-

nence in the center of the lip, which will form an artistic curve from the center of the lip to the corner of the mouth (see Fig. 3). This is the reason why, when the center of the lip is made



FIG. 8.

prominent and the scar left in the center of the face in double harelip, that the results are so much more beautiful than in single harelip, with the scar, and a possible notch on one side



FIG. 9.

of the median line (see Figs. 4 and 10, the mother of the child). To throw the scar in the center in single hare lip (see Fig. 5, *g*). It is apparent that if the line from *b* to *c*, on one side of *c*

was taken away, and this space was to be again filled with the line AA, and have the union take place at *c*—the line on the other side of *c*, between *b* and *c*, should be removed—then *b* would meet *b* at *c*. This is exactly what is done in single hare lip, making the double curved incisions (see Fig. 7 and Fig. 1, which is incorrectly drawn). The incision (1-2) is as far from the corner of the mouth as 4-5 (Fig. 7). The centerpiece is cut to a V. All tissues are freely divided underneath, and the nostril and mucous membrane are detached from the bone. The V-shaped piece interposed (Fig. 3), and the free division



FIG. 10.

of mucous membrane allows the parts to come together in the center *c* (Fig. 7) without much tension, and makes the "cupid's bow," and an artistic lip (see Fig. 8).

Fig. 8 is from a photograph taken five days after the operation, the stitches not removed.

Fig. 9 is the same child seven days after the operation.

UNSUSPECTED RENAL CALCULUS.

ALFRED AUSTIN LONDON (*Australasian Med. Gaz.*, 1896, *xv*, 505). A boy, nine years of age was admitted into the Adelaide Children's Hospital, on December 1st, 1889, with acute symptoms of only ten days' duration, which simulated incipient left hip disease. On examination, however, it was obvious that the mischief was intra-abdominal, and psoas abscess was suspected. An aspirator needle was inserted in the iliac and lumbar regions with negative results on December 6th. Three weeks later a distinct tumor had formed, and pus was found in both situations on December 30th. It was decided to open the abscess in the loin rather than in the groin in order to get at the diseased vertebræ. The abscess was opened and the pus found to be sweet; the abscess cavity was loculated; no stone was felt; the vertebræ were easily reached with the finger, but were not carious. The wound healed, but the abscess re-formed, and was re-opened. A second time it

closed, and then burst open, and a sinus persisted. In December, 1890, a calculus was found to be impacted in the urethra, broken off from another portion which was removed by the supra-pubic operation. The sinus then closed.

PECULIAR NASAL POLYPUS IN A CHILD AGED SEVEN YEARS.

J. LOCKHART GIBSON (*Australasian Med. Gaz.*, 1896, xv, 503) reports this case. A. S., aged 7 years, was brought to the Children's Hospital with a history of very difficult and noisy breathing and of slight deafness. Examination showed that he was quite unable to breathe through his left nostril, and only very imperfectly through his right nostril. A finger in the naso-pharynx detected some adenoids in its posterior part, but upon being passed forward the posterior margin of the nasal septum could not be felt, and the posterior nasal orifices were blocked by a pretty solid mass of tissue. This mass of tissue had its greatest bulk in the posterior part of the left nostril. Anterior rhinoscopy revealed the surface of a polypus towards the back of the left nostril. Posterior rhinoscopy showed some adenoids on the naso-pharyngeal roof posteriorly, and a marble-sized, red, firm-looking polypus projecting across the septum from the left nostril, and hiding also the right posterior nostril.

Under cocain, in the sitting position, guided by a rhinoscopic mirror, the marble-sized projection was caught in the wire loop of a Chiari's post-nasal snare. Ordinary traction failed to dislodge it, but upon laying hold of the tube far back in the mouth considerable force was used, and brought away the large and peculiar-shaped polypus. The part in the left nostril came out like the pulling of a cork out of a bottle, and the impression was received that the force applied for dislodging the polypus was required much more because of the tightness with which the part in the nostril was held than for breaking the pedicle. The whole growth measured $2\frac{1}{4}$ inches in length, $\frac{3}{4}$ inch in depth, and a $\frac{1}{4}$ inch in thickness, in addition to the pedicle, which was attached to the middle of its long axis, and which was thin, and about $\frac{1}{3}$ inch in length. The part situated in the naso-pharynx was much more solid than nasal polypi usually are. The nasal part was also unusually solid. After its removal breathing was quite free, and the nostrils, back and front, quite clear to examination. A spot on the external wall of the posterior left nostril, under cover of the middle turbinated body, seemed to be where the pedicle had been attached. It had come away quite level with the mucous membrane. From its pedicle, therefore, one-half of the polypus had grown forward into the left nostril, completely blocking it, while the other half had grown into the naso-pharynx across the septum, and had partially blocked the right nostril posteriorly. This half was closely and firmly applied to the septum and posterior nares.

BACTERIOLOGICAL REPORT OF 121 CASES OF ACUTE LOBAR PNEUMONIA, AND OF 128 CASES OF ACUTE BRONCHO PNEUMONIA; TOGETHER WITH 55 CASES OF VARIOUS INFECTIONS DUE TO THE PNEUMOCOCCUS.

R. M. PEARCE (*Journ. Bost. Soc. Med. Sci.*, June, 1897) presented a report of all the cases of acute lobar pneumonia and acute broncho-pneumonia which have come to autopsy and have been studied bacteriologically at the Boston City Hospital between May 1st of 1894 and May 1st of 1897. It includes also the report of various infections due to the pneumococcus found at autopsy or at operation.

The methods of study pursued were those usually employed. Löffler's blood-serum prepared according to Mallory's modification, was the culture medium used. Cultures were taken from the solidified lung, pleural and pericardial exudates, if present, and heart's blood, liver, spleen, kidney, and various lymphatic glands. In some cases direct examination by coverslip preparations was made.

In 121 cases of acute lobar pneumonia the pneumococcus was found in the solidified lung in 110 cases, in 84 of which it was the only micro-organism present. In the remaining 26 cases it was associated with the staphylococcus pyogenes aureus nine times, streptococcus pyogenes eight times, staphylococcus pyogenes aureus and streptococcus three times, streptococcus pyogenes and staphylococcus pyogenes albus twice, bacillus capsulatus (Wright) once, staphylococcus pyogenes albus once, Klebs-Löffler bacillus once, both Klebs-Löffler bacillus and streptococcus pyogenes once.

(In this summary the presence of the bacillus colicomunis has not been considered of sufficient importance for classification.)

Of the 11 remaining cases, in eight the lung culture was not taken in four, lost in two, and sterile in two, but in each of these there was a general infection with the pneumococcus, and in three it was present in either pericardial or pleural exudate. This would justify the conclusion that the process in the lung was due to the same organism and was the source of the general infection. If, therefore, these cases are added to the others they make a total of 118 out of 121, or 97.5 per cent. due to the pneumococcus.

With the exception of the eight cases just considered, in only three cases of the 121 was the pneumococcus not present in the solidified lung or pleural exudate. These cases, both macroscopically and microscopically, were true lobar pneumonias. In one case there was a general staphylococcus infection following epididymitis, cystitis and pyelo-nephritis. Cultures from lung showed abundant growth of staphylococcus pyogenes aureus. In the second case, complicating typhoid fever,

lung cultures showed abundant growth of the streptococcus pyogenes. It is very probable that in both these cases the growth of the pneumococcus was inhibited, or was present in small numbers but obscured by the profuse growth of the other organism. The third case was an old pneumonia, well along in the third stage, in which the staphylococcus pyogenes albus only was found. It is very probable that in this case the pneumococcus was the causative agent, but had died out.

In this series the bacillus of Friedlander was not met with at all.

Complications.—In the exudate of acute pleuritis and acute pericarditis associated with pneumonia, the pneumococcus was found in every case in which examinations were made, 49 times in pleural exudates and 15 times in pericardial exudates.

Abscess of lung following pneumonia occurred in three cases. In two of these the pneumococcus was the only organism present. In the third case, which was an unresolved pneumonia, the staphylococcus pyogenes aureus and the streptococcus were also present in addition to the pneumococcus.

In two cases in which an acute meningitis, and in three in which an acute endocarditis was associated with or followed the pneumonia, the pneumococcus was present in pure culture. This was also true of one case of acute fibrinous peritonitis.

As regards general infection, in this series of 118 cases, the pneumococcus was found in the heart's blood 56 times, liver 44 times, spleen 47 times, kidney 51 times, and in 2 cases in which the exudate extended up through the mediastinal tissues to the neck, the pneumococcus was present in the infiltrated tissues and cervical glands.

As regards the intensity of the infection, in 18 cases it was found in all of the organs, that is heart's blood, liver, spleen, and kidney; in 18 cases in three, in 21 cases in two, and in 24 cases in at least one.

The results in this series agree with those of Frankel, Weichselbaum, Netter, Welch, and others; though the proportion of cases in which the pneumococcus was found is greater, as is also the number of cases with general infection.

Acute Broncho-pneumonia.—This report includes 128 cases, which may be divided into two classes, those associated with the acute infectious diseases of childhood, 82 cases; and second, those associated with other medical and surgical affections and generally occurring in adults, 46 cases.

Of this first class 62 were associated with diphtheria alone and the organisms present were the Klebs-Löffler bacillus 52 times, the streptococcus pyogenes 27 times, the staphylococcus pyogenes aureus 11 times, the staphylococcus pyogenes albus once, and the pneumococcus once. The Klebs-Löffler bacillus occurred alone in 17 cases, the streptococcus pyogenes alone in 7 cases. In the rest of the 62 cases the organisms occurred in various combinations.

In 9 cases of scarlet fever and diphtheria combined, the Klebs-Löffler bacillus was present in every case, in 5 cases alone, in the other 4 associated with the streptococcus pyogenes, the staphylococcus pyogenes aureus, and the pneumococcus.

In 2 cases of diphtheria and measles combined, the Klebs-Löffler bacillus, the streptococcus and the staphylococcus pyogenes aureus were present in each case.

In 9 cases of scarlet fever the streptococcus was found in two cases, the pneumococcus in two cases, the staphylococcus pyogenes aureus in one case, the streptococcus pyogenes and staphylococcus pyogenes aureus in 3 cases, the pneumococcus and the staphylococcus pyogenes aureus in 1 case.

The association of the Klebs-Löffler bacillus with broncho-pneumonia in such a large proportion of the cases, 63 out of 73, would indicate that its presence was more than accidental; and its occurrence in pure culture in 17 cases strengthens the theory held by some observers, that broncho-pneumonia may be due to the action of this organism, with or without the aid of the pyogenic cocci.

Of other organisms associated with the broncho-pneumonia of diphtheria and scarlet fever the streptococcus pyogenes is the most common. In this series of 82 cases it occurred 44 times. The pneumococcus was present in only 8 cases, and it is of interest that 5 of these were scarlet fever cases. In 2 of the latter it was obtained in pure culture.

The second class of broncho-pneumonias, 46 in number, occurring principally in adults, are best studied by grouping them according to the diseases with which they are associated, as follows: typhoid fever, 5 cases; the colon bacillus in two, the pneumococcus in one, and the pneumococcus, streptococcus pyogenes and staphylococcus pyogenes aureus in one. In the 5th, which was also complicated by diphtheria, the Klebs-Löffler bacillus, staphylococcus pyogenes and bacillus capsulatus were found.

Chronic purulent bronchitis, 4 cases, in 2 the streptococcus pyogenes alone; the pneumococcus in one and the staphylococcus pyogenes aureus in one.

Gangrene of lung, one case, colon bacillus only.

Chronic pulmonary tuberculosis (with an associated non-tubercular broncho-pneumonia), 3 cases, in one the pneumococcus; in another the staphylococcus pyogenes aureus; and in the third the streptococcus pyogenes and staphylococcus pyogenes aureus together.

Acute miliary tuberculosis, 1 case, streptococcus pyogenes, general streptococcus infection.

Pulmonary thrombosis, 2 cases, pneumococcus in one; colon bacillus in the other.

Acute meningitis, 4 cases, in each the same organism was

found in the broncho-pneumonia as in the meningeal exudate, in three the streptococcus pyogenes, in one the pneumococcus.

Acute nephritis, 1 case, the streptococcus pyogenes and the pneumococcus. General infection.

Chronic cardiac and renal, 6 cases, in three the pneumococcus alone, with general infection. The streptococcus alone in 2 cases; and the staphylococcus pyogenes aureus in 1 case.

Chronic nephritis, 2 cases, in one the pneumococcus and the staphylococcus pyogenes aureus; and in the other the pneumococcus and the streptococcus.

Acute ulcerative endocarditis, 2 cases, the streptococcus in one, the pneumococcus in the other.

Intestinal affections, 4 cases, in three of these (diphtheritic colitis, chronic colitis, and appendicitis, respectively) the process in the lung was due to the streptococcus pyogenes. In the 4th, acute intussusception, the streptococcus pyogenes and the pneumococcus were present.

Acute peritonitis, 1 case, colon bacillus the only organism present.

Cerebral hemorrhage or thrombosis, 3 cases, the pneumococcus, alone in two, the staphylococcus pyogenes albus in the third.

Multiple injuries with cerebral hemorrhage, 1 case, the streptococcus pyogenes.

Acute suppurative inflammation of the middle ear, 2 cases, the streptococcus pyogenes alone in one, the streptococcus, pneumococcus and staphylococcus pyogenes aureus in the other.

Puerperal septicemia, 1 case, the streptococcus pyogenes.

To sum up, the streptococcus pyogenes occurred alone in 16 cases, the pneumococcus alone in 12 cases, the staphylococcus pyogenes aureus alone in 6 cases, the staphylococcus pyogenes albus alone in one case, the colon bacillus in 5 cases, and the various combinations of these in the other cases.

It is noticeable that in all cases where a local or a general infection existed the associated broncho-pneumonia was due to the same micro-organism. But where the condition was a chronic or non-infectious process, as chronic cardiac and renal diseases, cerebral hemorrhages, etc., the broncho-pneumonia was generally due to the pneumococcus; thus, of the twelve cases in which the pneumococcus occurred alone, eight were chronic diseases.

Various infections due to the pneumococcus, fifty-five cases.
—The autopsy records show 26 acute infectious processes in which the pneumococcus was present, and which were not accompanied or preceded by a lobar pneumonia. These are divided as follows: acute ulcerative endocarditis, 6 cases; two cases were associated with chronic pulmonary tuberculosis;

one with a broncho-pneumonia, and one with an abscess of the myocardium; and in two there were no lesions besides the endocarditis. In all, the pneumococcus was the only organism present. In three cases there was a general infection.

Acute purulent meningitis, 5 cases. Two of these followed suppurative disease of the middle ear due to infection through the Eustachian tube after fracture of the base of the skull through the petrous portion of temporal bone. (These two cases have already been reported by Wright and Stokes in *Boston Medical and Surgical Journal*, March, 1895.) Pure culture of the pneumococcus was obtained in each case; and a general infection was present in each case. The third case was a broncho-pneumonia, pneumococcus was obtained in pure culture. The two other cases were apparently primary infections. The pneumococcus occurred alone in one, and in the other was associated with the streptococcus pyogenes and the diplococcus intracellularis meningitidis.

Acute fibrinous pericarditis, 3 cases. The pneumococcus was obtained in pure culture in each case.

Acute fibrinous peritonitis, 6 cases. One followed operation for radical cure of inguinal hernia; the pneumococcus present in pure culture; general infection. Two cases followed an acute endometritis, the pneumococcus present in pure culture, and also demonstrated in the endometrium and Fallopian tubes; general infection in both cases. One case followed rupture of pyo-salpinx, the pneumococcus present in pure culture. One case followed perforation of rectum with formation of pelvic abscess, colon bacillus and staphylococcus citreus present in addition to the pneumococcus. In the 6th case following appendicitis, there was a profuse growth of the pneumococcus with a few colonies of staphylococcus pyogenes aureus.

There was general infection with the pneumococcus in 6 cases. In three cases associated with leukemia, chronic pulmonary tuberculosis, and general sarcomatosis (with broncho-pneumonia) respectively, the pneumococcus was present in pure culture. (This last case has been previously reported by Dr. Wright.) In the remaining 3 cases it was associated with the staphylococcus pyogenes aureus.

In the Surgical and Medical Reports of the hospital, infection with the pneumococcus has been found 29 times. These infections are divided as follows: Pleuritis, 15 cases, in 7 of which the exudate was sero-fibrinous and the pneumococcus present in pure culture. In 8 cases of purulent pleuritis the pneumococcus was present in pure culture in 6 and associated with the streptococcus pyogenes in 2. These cases were, of course, all coincident with acute lobar pneumonia.

Acute abscess, 6 cases. In four of these the pneumococcus was present in pure culture. They were deep cervical

abscess, abscess of leg, of upper eyelid, and of liver communicating with pleural cavity, respectively. In the other two, of the face and finger respectively, one had the staphylococcus pyogenes aureus present; and the other the streptococcus pyogenes in addition to the pneumococcus.

Acute suppurative otitis media, 2 cases. Pneumococcus alone in one; in the other associated with staphylococcus pyogenes aureus.

Acute suppurative mastoiditis, 3 cases. The pneumococcus alone in one, associated with the streptococcus pyogenes in the other.

Acute purulent peritonitis, 1 case, pneumococcus and colon bacillus present.

Gangrene appendicitis, 1 case, pneumococcus and colon bacillus present.

Pyo-salpinx, 1 case, pneumococcus present in pure culture.

The association of the pneumococcus with the above acute processes indicates that like the tubercle bacillus and the typhoid bacillus, it may in addition to its specific characteristic lesion, produce acute suppuration.



PEDIATRICS

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ORIGINAL ARTICLES.

ANTITOXIN AND INTUBATION IN THE TREATMENT OF DIPHTHERITIC CROUP.

By J. LEWIS SMITH, M.D.,
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THE distinguished bacteriologist, M. Roux, in one of his monographs relating to diphtheritic croup, writes substantially that henceforth by the timely and proper use of antitoxin and intubation, "this painful disease will be cured in a much larger proportion of cases than formerly, and that painful and dreadful operation—tracheotomy—will seldom be required."

If such a prediction be true, the medical profession and the world will justly honor the physician who has aided in promoting such a result. No disease has been so disheartening to the physician and has caused so much distrust of his ability to cope with the maladies that affect the human race as the slow, progressive and fatal dyspnea of croup. A fatal result has heretofore been common whatever the mode of treatment.

The Mode of Treatment.—The present decade has witnessed the introduction of three methods which are likely to furnish important aids to the physician in the treatment of this malady. Of the three methods alluded to, the first in time is the sublimation of calomel. A tent about five feet in height is erected over the bed in which the child lies and the sublimation of calomel, grains x or xv, is produced upon a tin plate over a spirit lamp. The vapor is very pungent and irritating and under a closed tent cannot be used, without danger of sal-

ivation, longer than fifteen to twenty minutes and not oftener than every three or four hours.

In the New York Foundling Asylum, although this treatment has apparently in some instances aided in curing the disease and in saving life, the adults outside the tent were so severely salivated that the use of this remedy is no longer allowed in this institution. A prominent physician of New York was so severely salivated by holding his head under the tent in a single case that he was an invalid for some months afterwards, though his patient lived.

A second and very important improvement made in recent years in the treatment of croup is intubation, for which the world is indebted to the genius and perseverance of Dr. Joseph O'Dwyer. This operation is so generally known and the quick relief which it in many cases gives to those who without it would inevitably perish from slow suffocation, that we need not direct further attention to it. But it is the belief of many that the subcutaneous injection of antitoxin employed early will be found to be a most useful remedy in arresting the progress of croup. Facts accumulate to show that in whatever part the diphtheritic exudate occurs, it may be arrested by the prompt injection of antitoxin. In the first of December last I gave the statistics of the New York Foundling Asylum, showing the results of the treatment of diphtheria by antitoxin during five months. The purpose of this paper is to ascertain whether in cases occurring since December 1, and having croupy symptoms, antitoxin has had any influence upon the croup. My statistics consist of cases of croup in which the Klebs-Loeffler bacillus was present occurring in the Foundling Asylum since December 1, 1896. In all the cases which we will relate, the Klebs-Loeffler bacillus was present.

Case 1.—A. E. Aged three years. Exhibited the characteristic symptoms of croup on December 3, 1896, and extended into the larynx. The respiration was audible in the adjoining room. Supra- and infra-sternal depression in inspiration was pronounced. Five minims of the tincture of the chloride of iron with a small amount of the chlorate of potassium was given every four hours on December 3, and a single injection of 2000 units of antitoxin were given on the same day. Three days later, without further use of antitoxin and without intubation, the child was pronounced cured.

Case 2.—M. D. Aged four months, on December 6th, had a pseudo-membrane over both tonsils and both posterior pillars of the fauces as far as could be seen. On the second day, the Loeffler bacillus being readily detected by the microscope, 1000 units of antitoxin were injected. A few hours after the exudation the pseudo-membrane began to disappear and on the third was no longer present.

Case 3.—L. P. Aged three years. The diphtheritic exudate was first noticed over both tonsils and a portion of the pharynx on January 7. Temperature on the 7th, 103.5. On this day antitoxin (1500) units were injected and on January 8, 2000 additional units were given. The child was intubated three times to relieve the dyspnea, carrying the tube in all nine days. Nevertheless pneumonia supervened and was fatal on the tenth day from the beginning of the sickness.

Case 4.—G. M. Age nine months. Had a moderate diphtheritic exudate extending to the nostrils and larynx, and accompanied by the Loeffler bacillus. On the same day 1000 units of antitoxin were injected. The temperature was 99, and the respiration was of a croupy character, though not indicative of immediate danger. The pseudo-membrane and croupy cough and respiration gradually disappeared without further use of the antitoxin and without intubation.

Case 5.—C. A. Age two years, four months. On January 7, the specific germs and the patches were found upon the tonsils and fauces, and 2000 units of antitoxin were immediately inserted. This sufficed to produce a gradual detachment of the membrane and cure resulted without intubation.

Case 6.—M. B. Age four months. Was nearly moribund on admission and died soon after, having been sick three days. During the short stay within the hospital 1000 units of antitoxin were inserted but without appreciable benefit.

Case 7.—M. G. Two years, nine months. A pseudo-membrane was discovered on January 21, along with croupy symptoms, and 2400 units were used. On the 23d the dyspnea continued and 2000 more units were inserted. The disease was complicated with pertussis, and intubation was performed. This case recovered. The intubation seemed beneficial to the whooping-cough.

Case 8.—F. S. Age eleven months. The dyspnea and cyanosis attracted attention when the infant entered the asy-

lum and 2000 units were used. On the 23d 1600 were employed in addition and the larynx was intubated, but death occurred on the 24th, preceded by a temperature of 104 to 106. At the autopsy a membrane was found over the larynx and double pneumonia was present.

Case 9.—K. E. Two years, eight months. Under treatment in the spasmodic stage of pertussis. On account of the severity of the dyspnea, 2000 units of antitoxin were injected on January 22d. On the 23d 2000 more were added. The child was also intubated on the 22d, and the tube was removed on the 25th. Recovery resulted from the antitoxin.

Case 10.—L. S. Age two years, eleven months. Became croupy on March 16, and 2500 units were employed. Four hours later 1500 units were used, and on the 18th 2000 more were given. The membrane covered the larynx; temperature, 103.8. On the 19th the child died. The autopsy showed great congestion of the brain.

Case 11.—M. R. Age nine months. Pseudo-membrane seen on the tonsils; embarrassed breathing and croupiness beginning; 2000 units of antitoxin were to-day employed. The case is still under treatment, with a good outlook.

SOME NOTES ON THE EXAMINATION AND DIAGNOSIS OF DISEASES OF THE THROAT AND NOSE.*

By SAMUEL G. DABNEY, M.D.,

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WHEN told to open the mouth for an examination of the throat, nearly all persons stretch the mouth wide open, either shut their eyes or turn them up, distort the face and hold the breath. Under these circumstances gagging will occur almost the moment an instrument is introduced. The first instruction to the patient preliminary to inspection should be to continue to breathe naturally and to let the face be placid. Of course these directions are often impracticable in little children, but even in them when prolonged local treatment is necessary the throat may be trained

* Read before the Louisville Clinical Society.

to a surprising tolerance. Much of the success which distinguished operators obtain depends upon the long careful education of the patient's throat. Cocaine has made the necessity for this less than formerly. It is especially important that respiration should continue easily and quietly, for thus we see the parts of the throat in their natural position, and when the breath is held gagging is very quickly produced.

A few persons, mostly those whose throats have been trained by vocal lessons, can so depress their own tongue as to allow thorough inspection of the pharynx. In the majority of cases a tongue depressor is needed. It should not be wide enough to press on the gums on either side. Care is requisite in introducing it. Carried too far it produces gagging, not far enough it makes the back of the tongue rise up and obstruct the view.

A word as to the head mirror. Its use is, of course, very common, but not so universal, it seems to me, as its value and the ease of its manipulation deserve. I have often wondered whether the general surgeon would not find it useful in other cavities of the body.

The color of the mucous membrane and the presence of swelling, ulceration or new growth will usually be quickly detected. The average length of the uvula is probably as stated by Bosworth about three-eighths of an inch. Its elongation is a common cause of cough and tickling in the throat, and a rare cause of morning nausea. But it is well to remember that this same group of symptoms may be due to other throat diseases, notably nasopharyngitis and enlargement of either faucial or lingual tonsil.

Any protrusion of the tonsil beyond the pillars of the fauces indicates an abnormal enlargement, and its appearance with the history of the case will quickly decide whether the condition is acute or chronic. But the form of tonsillar disease most likely to be overlooked is chronic inflammation in the flat deep-seated tonsil. For an examination in these cases it is often necessary to draw the anterior pillar of the fauces to one side with a bent probe; there will then be revealed a deep follicular inflammation attended with the formation of offensive cheesy masses. Herein will sometimes be found the cause of obstinate cough and discomfort in the side of the throat. In quinsy or peritonsillar abscess it is occasionally

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possible to evacuate a little pus by probing in the tonsil, but the tendency to point is nearly always above and to the outside of the tonsil.

By remembering that this disease may be consequent on a severe follicular inflammation we may sometimes abort it. I feel sure I have had this result from careful antiseptic and cleansing applications, such as a probe wrapped with cotton, dipped into peroxide of hydrogen, and carried into the tonsillar crypts. It is important to examine the roof of the mouth. Syphilitic ulceration may exist there when the throat otherwise is healthy, and the symptoms produced by it are often amazingly slight. Recently I was on the point of overlooking an extensive and typical gumma just in the middle line of a high-arched hard palate, when I had made an otherwise thorough examination of the throat and found it all right. Slight erosions of the mucous membrane are common, and are often associated with a disturbed stomach. Herpetic ulceration is seen now and then. But a genuine deep-seated ulceration about the throat is either syphilitic, tubercular, or malignant. Tubercular ulcers in the pharynx are relatively rare. The cases I have seen were associated with well-marked phthisis. The ulcers were deep, sharp cut, and painful. I have seen them on the tonsil where they looked as if they had been punched out with an awl. Syphilitic ulceration on the upper surface of the soft palate is likely to be overlooked unless the rhinoscopic mirror is used.

Affections of the lingual tonsil have received much attention in the last year or two. Numerous papers have been presented on its acute and chronic disease. This so-called lingual tonsil is a mass situated at the base of the tongue and between it and the epiglottis. In structure it resembles the tonsils but unlike them is rarely a cause of trouble in children. For its examination the laryngoscopic mirror is necessary. The tongue should be held out by the patient grasping the tip of it in a handkerchief or towel and the surgeon, holding his mirror against the uvula, will see in it the base of the tongue. Enlarged veins are common here. They are known as lingual varix and give rise sometimes to discomfort, sometimes to the sense of a foreign body, and sometimes to a little blood, usually found in the mouth on waking in the morning. Enlargement of lingual tonsil may be a source of persistent cough and

a subacute inflammation there may cause the pain in the throat which the patient usually locates by pressing about the hyoid bone. To examine the nasopharynx we use the rhinoscopic mirror in adults and generally the sense of touch as indicated by the finger in children. When the space between the posterior wall of the pharynx and the soft palate is narrow, the latter should be held forward with White's palate retractor. Previous to its introduction cocaine should be applied with a curved probe. Here, too, the secret of success lies in teaching the patient to continue to breathe quietly. As soon as the retractor is inserted, the mouth should be closed and a deep breath be taken. So much has been written and said about adenoids that I will not discuss them. But I would remark that even a small growth may give rise to much discharge which is often erroneously thought to come from the nose itself. This is frequently the case in adults as well as children.

The most common disease of the accessory sinuses of the nose is suppuration of the antrum of Highmore. In every case of discharge from one nostril, when a foreign body has been excluded suspicion is aroused of antrum disease. Diagnosis is always easy but two symptoms when combined are almost pathognomonic. These are the dark spot on transillumination with Heryny's lamp and pus seen coming from above the middle turbinate. Some precautions are needed in the execution of these tests. For the transillumination the room should be as dark as possible and there should, of course, be no plate in the roof of the mouth. The dark spot is more often seen just under the eye than directly over the antrum. After making this test the nose should be thoroughly sprayed out and cocaine applied so as to shrink the turbinate tissues; then the patient should lie on a sofa with the head hanging over the edge and the affected side uppermost; after a few minutes he should rise and remember not to blow the nose or hawk. If pus is now found oozing over the middle turbinate, and if there is a dark spot under transillumination, the diagnosis of antrum disease is established.

In any case of non-inflammatory new growths of recent origin within the nose, if attended with marked pain and involvement of neighboring lymphatics and presenting many symptoms of malignancy, antisyphilitic treatment is worthy of trial even if syphilis is denied. A case of tumor involving

the left lower turbinated pressing on the septum opposite, attended with enlargement of glands on that side of the neck and causing considerable pain, cleared up rapidly under iodide of potassium though the patient denied any knowledge of having suffered from syphilis.

In an article some years ago, I reported several cases of a rather rare affection, abscess of the nasal septum. In two of these cases very competent physicians had diagnosed erysipelas. The fever with swelling and redness over and around the nose presented some resemblance to that disease. The diagnosis was easily made when a nasal examination showed the septum bulging to each side, and almost occluding each nostril, and soft from the pus contained in it. One case was traumatic and one was syphilitic.

DISCUSSION.

Dr. I. N. BLOOM: One point Dr. Dabney made I think will bear emphasis, that is the frequency with which syphilitic lesions of the mouth and throat are overlooked. I know that I have often almost overlooked such lesions. A patient came to me recently having a typical alopecia syphilitica with no other symptom apparently for two years. I have always made it a point to carefully examine the mouth and throat of all patients in whom I suspect syphilis, and especially is it important to inspect the region of the palate. On this occasion I was about to overlook that; I had the patient throw her head back and I discovered a distinct roughening on the palate typical of syphilis, equal in area to one-third the size of a copper cent. This could easily be seen with the aid of the laryngoscopic mirror. A complete cure followed syphilitic treatment. The early and most destructive lesions of the palate are usually in my experience found at the junction of the hard and soft palate. I have noticed this a number of times.

Dr. P. F. BARBOUR: I was glad to hear the essayist enumerate some of the frequent reflex causes of coughs. I think the most of us as soon as a patient applies for treatment, and frequently for a long time afterward, associate a cough with lung trouble, and look in vain in a great many instances for the source of irritation. I have noticed this frequently in children where it is difficult to make as careful an examination of the lungs as we would like. We are often unable to account for a cough, and find afterwards it is due to some form of

throat trouble. I remember reading an article some time ago on the sources of reflex cough in children and the author gave throat troubles, pharyngitis or tonsillitis, as the cause of twenty-three per cent. of such cases.

Dr. T. C. EVANS: Dr. Dabney said very little about throat affections that are the result, or follow upon nasal stenosis. A great majority of pharyngeal affections, and a large percentage of affections of the larynx, follow upon obstructions of the nasal cavity. A young lady came in my office to-day complaining of a persistent hoarseness. On examination of the larynx I saw very little irritation there, certainly not enough to cause the extreme degree of hoarseness from which she suffered. On examining the nose I found one nostril entirely obstructed by a nasal polyp, which is the most frequent cause of nasal obstruction. This polyp had evidently existed for months and had never been suspected. She complained of no nasal symptoms except some obstruction, and applied to me for treatment only when the laryngeal trouble became evident.

AN EFFICIENT REMEDY FOR WORMS.

By S. M. WARD, M.D.,

Hampton, N. H.

SEEING so many formulæ in the various journals, I am led to believe that the "round worm" has proven, in many instances, difficult to destroy. I have successfully used the following many hundreds of times, and can strongly recommend it:

℞ Santonine,..... gr. iii.
Hydrag. chlor. mite..... gr. x.
Sacchr. alb..... q. s.

Mix. Ft. chart. No. ii (2) div.

Sig. For a child, three to six years old. One is taken on retiring, and the other in the morning, fasting.

When thread or pin worms are to be removed, I give only one powder and follow its laxative action with an injection of warm water, containing to each cup a tablespoonful of lime water. I believe that failure to permanently get rid of this parasite is due to neglect in destroying the eggs. Carbolic vaseline applied to the anus after each evacuation of the bowels will prevent further trouble.

I may add that tablet triturates have given such unsatisfactory results that I invariably order the santonine and calomel to be made in powders and not tablets.

THE SCHOOLHOUSE ATTIC OR LOFT A BREEDING PLACE FOR VERMIN.

By H. P. WENZEL, M.D.,
Milwaukee, Wis.

HOW many of the patrons of the rural schools especially, ever give a second thought to the proper care and keeping of the schoolhouse loft during the long vacation, or even when the building is used daily by pupils and teachers? How many have the remotest idea of certain conditions developing there; a part of the building that is never investigated, where vermin can dwell undisturbed and propagate and multiply in peace; or succumbing there, with their filth produce atmospheric and other infection which sooner or later shows its baleful manifestations in the school among teachers and pupils alike?

These lines were suggested by a conversation with a bright school principal whose charge of several hundred pupils was housed in a building built decades ago. He could not account for the peculiarly offensive, pungent odor permeating the rooms in spite of the best ventilation they could provide; even thorough cleaning of walls, floors, ceilings, outbuildings, grounds, etc., had no effect to dissipate it. On hot, moist days it was always worse. It constantly remained, causing the children to complain of headache, dizziness, incapacity to study, etc.

I suggested that the attic or loft be carefully investigated, where in all probability he would find a partial solution, at least, of his trouble and discomfort. To inspect the chimneys at the same time, for those places, long undisturbed, were habitations for bats and vermin, and that bugs—bed bugs especially—were very near neighbors of bats.

A few weeks later the teacher again visited me, relating that his examination of the attic had discovered a veritable menagerie of bats, bugs, etc.

"The pestiferous odor made me feel sick, but we did not rest until the loft was clean. By freely using lime and carbolic acid we destroyed the offensive smell to a great extent,

and during bright, crisp days we can stand it pretty well, but in moist, damp weather the odor is still very effective in causing headache, nausea, pain in the eyes, listlessness and indolence to work among the pupils.

"But we no longer carry off unwholesome visitors on our clothing to our homes. Before the cleaning the ceilings were alive with bugs and vermin."

Another somewhat analogous instance is reported in the *Wabash Plain Dealer*, of September 28, 1895, as follows;

"Bedbugs Stampede a School. — The pupils of Miss ——— and Miss ——— in the east end school building (of Peru) are enjoying a holiday; that is, as much as they can while they are not busy scratching bedbug bites, with which they are all well covered.

"In some manner that could be explained in several different ways, the walls between the two rooms seem to have been alive with the insects, almost the same as if a hive of bees had been turned loose (this was two weeks after opening of fall term in September). The furnace heat that was turned on yesterday on account of the cool weather, tended to liven up the creatures and instil in them the desire to roam abroad and begin their usual conquests.

"It was not very long till teachers and pupils were aware of their presence, but none of them having had any experience with such things, they could not at first tell what such an outpouring really meant. One of the teachers carried one of the insects down town (of 10,000 souls) in her handkerchief to show it, and was horrified to learn to what class it belonged. Another stopped at a neighboring house, and while telling of the situation the woman picked eleven fat old fellows from her clothing. Superintendent Stratford stepped into one of the rooms infested to see the actual condition of things, and before he knew it one of the best specimens, almost the size of a mouse, began crawling up his trousers leg," etc.

To which the *Peru Journal* adds: "The battle with the bedbugs at the Third ward school building is at an end, and the cimex lectularii has been exterminated. . . . The nest was in the chimney, and was alive with bugs," etc.

These two striking examples ought to teach us all a lesson. There is not only danger of disseminating objectionable vermin broadcast, but the local conditions cause great

and grave interference with the duties of the instructors towards their charges—the children; and a tendency to produce illness and neglect in their studies and deportment on the part of the children. My own experience in the school-room has shown that a pure, sweet, well-aired apartment is an incentive to work and study, while an illy-ventilated, foul room is productive of hebetude, depression, listlessness, with no courage for either study or work, oftentimes ill health, which the scholars must contend with. Let me transcribe from a letter from a bright principal whose fortune it was to have one of these old buildings for a portion of the year, until the new building was ready for occupation. After describing the unhygienic building, grounds, outbuildings, rooms, etc., he adds;

“As a consequence of poor ventilation the air under the most favorable circumstances is bad. But when is added the gases from wood and coal stoves, the odor from the bats, it becomes almost unendurable. The odor from the bats is so strong that it nearly makes me sick at the stomach, particularly on warm moist days. It is a peculiar pungent odor that seems to affect the throat. Bedbugs add to the effect.

“People have visited our school, and on arriving at home have found bedbugs on their clothing, not knowing where they came from . . . until we informed them of the condition of the schoolhouse.

“The effect of these conditions upon pupils and teachers is depressing and detrimental to health. I have gone to the building in the morning feeling strong and well . . . when school closed I felt exhausted.

“I observe the effects on the teachers to be: depression of spirits, dulness of brain, lack of animation and energy, headache, complete exhaustion physically.

“The effects on the pupils are still more noticeable. They are listless and depressed, lack animation and interest in their work. That this is due to the unfavorable conditions is shown by the fact that on bright frosty days when the air in the schoolrooms is much better, they show much greater interest in their work.

“Headaches are very frequent. We also have many out on account of sickness. In fact the general health of the pupils is not the best—not knowing where is the trouble or what the cause.

"The eyes of the pupils in the lower rooms are in fairly good condition. In the upper rooms I find almost the entire number of pupils have trouble with their eyes. Many are myopic, others have weak eyes, etc. Each day we receive complaint that this or that one cannot study because the eyes ache. To say that 75 to 80 per cent. of the pupils have some eye trouble would be a fair estimate. None of them wear glasses.

"Another condition favorable to ill health is the *dust*; the building is saturated with it, everything is covered by it. . . . Take this in connection with the odor from the bats, bedbugs, etc., and the rooms are just as bad as can be imagined. . . . The bats and vermin have been in the building for years. Once or twice efforts were made to get rid of them, but failed."

After removing to the new building he writes: "Pupils and teachers are bright, energetic, in better health, apt at work; there is no complaint, no indolence, and we can keep much better order," etc

How do you like the picture? It is faithfully drawn from actually existing conditions—from observation by a wide-awake experienced pedagogue. How shall it be corrected? Certainly parents and school boards must put their shoulders to the wheel of hygiene and clean out these pestiferous Augean stables. It may be a herculean task, but this nuisance, widely disseminated nuisance, evoked by carelessness and neglect, must be corrected. The physician must lend his aid; he should be an important member, a sanitary or hygienic adviser on every school board—a board that should be free from petty spite and politics.

Let the school buildings be thoroughly cleansed and kept clean, pure, sweet. Let hygienic laws be properly applied. The remedy is within reach of all. Provide proper light, correct ventilation, have proper school furniture, provide proper seats and desks. See that defective plumbing does not counteract the other good appliances, and does not impair the health of the pupils.

Let the outbuildings and grounds be attractive, clean, neat, pure and sweet; away with the filth-reeking and foul cesspools which smell rank to heaven, are an everlasting disgrace to the community, a place of repugnance for the pupils, a disease-breeding focus for human infection.

Let pure air circulate freely in the schoolrooms, suppress all offensiveness, and both teachers and pupils will do more and better work, enjoy better health, and complain of less ailments. The expense will result in a large profit for the public; for good health is beyond price—the wealth of the State.

Teach the children that “cleanliness is next to godliness.” Apply the teachings and rules of hygiene not only to buildings and grounds, but doubly apply them to the pupils, the rising generation; impress them with the idea that health and happiness can be obtained by following and obeying Hygeia’s laws constantly. It will make better men and women of them, better fit them for their life’s work physically, morally, mentally. It will better enable them to do their duty.

Let hygiene be a reality—not a farce, and proclaim her laws from every desk and rostrum in the land; it will bear fruit an hundredfold.



EDITORIAL.

THE FRENCH TREATMENT OF POTT'S DISEASE.

DR. CALOT'S optimistic report on the method of forcible reduction of the kyphotic spine under anesthesia, noticed in a previous number of PEDIATRICS, has attracted considerable attention. Recent French journals give further reports of the method in the hands of other observers. In the May number of the *Annales de Chirurgie et d'Orthopédie* Dr. Bilhaut, after confessing his disappointment with the jacket treatment in his own hands and in those of other French orthopedic surgeons—according to his observation the jacket treatment does not check disease nor prevent deformity—counsels the reduction of the bosse under anesthesia, using, however, only moderate force. In old rigid cases, those with an active abscess or with pulmonary or amyloid complications the method is not applicable. After reduction Dr. Bilhaut employs recumbency in the “grand appareil platré,” a plaster jacket which encases the head and pelvis as well as the trunk.

In an interesting monograph just published, Dr. A. Chipault, who claims to have originated the method of reduction under anesthesia, expressly warns against the use of violence, saying that any projection that is refractory to gentle pressure is not suitable for the method; all ankylosed cases are excluded. In addition to reducing the deformity in the early cases, Dr. Chipault wires the spinous processes and keeps the patient recumbent on a shaped and padded board. Wiring the spinous processes was done by Hadra of Texas for fracture, and proposed for Pott's disease, seven or eight years ago, but the method has not been favorably received in America. In paraplegic cases, where the disease is still active reduction is still to be employed, especially where the paraplegia has come on suddenly. Laminectomy has proved grave from an operative and disappointing from a therapeutic

standpoint, except in the rare cases due to the pressure of a sequestrum or of intra-rhachidian fungosities, and which unfortunately cannot be diagnosed. In the case of large abscesses one should immobilize but not reduce.

Dr. Ménard recently showed three specimens to the Paris Academy of Medicine on which he had performed forcible reduction of the kyphos post mortem. The cord and its membranes did not appear to be lacerated, but an abscess cavity was in one case torn open, and in all there was a large gap in front of the spinal canal. From his study of pathological specimens Dr. Ménard concludes that such a cavity would be filled, if at all, with fibrous tissue, and the deformity would finally recur. These researches of French surgeons direct attention to the possible advantage of overcoming reflex muscular spasm by anesthesia as a preliminary to immobilization, and they emphasize the growing tendency among careful workers to make larger use of recumbency in connection with immobilizing apparatus in the treatment of this disease.

HENRY LING TAYLOR,

New York.

HOT WEATHER AND YOUNG CHILDREN.

THE dangers to which young children are exposed in hot weather are many and varied, and it will not perhaps be unseasonable to refer to a few of these perils and give some words of warning. Grown up persons suffer from the heat, but they are free agents and are more or less able to please themselves, and unless their work or duties call them, are not compelled to submit themselves to the discomforts and dangers of a broiling sun and a humid atmosphere. With children the case is quite different, they must do as they are told, or if infants must go where the fancy of their mother or caretaker leads. Small children are very sensitive both to heat and cold, but while a mother would not dream of permitting her baby to breathe the outside air on an ordinary cold day she has no scruples at sending the little one out in the very hottest of weather often without sufficient protection

to either head or neck. This ignorant fear of the child taking a chill is carried to absurd lengths, and from a dread of this calamity happening the unfortunate infant is frequently in the height of the summer enveloped in the thickest and heaviest clothing. Where one child can be seen who may possibly have taken cold dozens can be seen who are palpably suffering from the effects of too much clothing. The clothes worn should be light in color and weight, and loose enough to admit of free action of the skin. Of course to deny that fresh air is healthful for children would be absurd, and under favorable conditions the more of it they have the better it will be for them, still discretion should be observed and the custom of sending out very young children for hours at a time subjected to the full glare of the sun and without ample protection against the force of its rays cannot be a wise one. During the hottest part of the day little children are safer in a well ventilated cool room, unless they chance to live close to a park or square where they can play or rest under the shade of big trees. For those whose parents can afford the expense, removal is the best remedy. If children could be sent away from the crowded towns as soon as the hot weather began they would be spared much sickness. However, after all it is on the poor and their children that the effects of an excessively high temperature press most cruelly. Wholesale transportation to the country cannot be resorted to in their case; these children are compelled perforce to stay in the hot, choked up towns, and as not infrequently happens to live in a building containing an average of ten persons to a family, breathing the stifling vitiated air that so limited a space renders inevitable. But infantile mortality must not by any means be put down wholly to the direct effect of heat. The trouble due to excess of temperature, both with the poor and the well to do is more often owing to errors of hygiene and diet than to the heat itself. The largest percentage of the ailments of children in the summer season should be laid to the charge of improper feeding. The mother or those in care of children, through mistaken ideas of kindness, or to keep them quiet will give them

solid food, as meat, vegetables and fruit. The natural sequel is an outbreak of infantile diarrhea, which regularly claims its victims by the thousands, after the first few weeks of warm weather. Here again it is the children of the poor who are the chief sufferers, and among whom the largest infantile mortality obtains. Poor people and their children by reason of their poverty have to eat whatever food they can get, however objectionable it may be. There is a widespread belief too, that it is dangerous to allow infants to drink cold water in the hot weather. This is quite an erroneous notion, water both internally and externally is a necessity, and a young child should be allowed a moderate quantity of water to drink, and babies should be bathed in cold water two or three times in the day when possible. A suggestion that sounds both excellent and feasible has been mooted by the *Cincinnati Lancet Clinic*; it is that the basement of public schools in the summer months be utilized as baths. These buildings are unoccupied for three months, and but trivial structural alterations would be needed to convert them into bath houses. This plan if carried out would prove a great boon to the poor, as water in sufficient quantities for bathing purposes is in many instances sadly lacking. To yet another cause of illness in the summer it may be as well to refer briefly. The consumption of ice cream, although it does not concern infants is a fruitful cause of sickness, and even death in older children. This delicacy, sometimes termed "America's national luxury," is, when manufactured under proper sanitary conditions, harmless enough, besides being pleasant and refreshing on a hot day. Unluckily these proper sanitary conditions are frequently not closely observed, and the concoction is a vehicle of all kinds of dirt, carrying in it the germs of fatal diseases. Ice cream to be harmless should be made with the utmost regard to cleanliness and in vessels that will not easily oxidize.

EDITORIAL COMMENTS.

The Infants' Asylum on Randall's Island.

Although within late years much advance has been effected in the care and management of children in New York city, there yet remains room for further improvement. In 1875 the city treated its destitute children so badly that soon after that date the legislature directed the city authorities to either place the children in private families or turn them over to private institutions, and since that year the city has not been allowed to retain in its charge any children sound in mind and body over two years of age. From an investigation of the affairs of the "Infants' Asylum at Randall's Island," which, until a few months ago was under the control of the city, the truth has been made public that the mortality among the infants reaches the fearful rate of nearly 90 per cent. Before the institution was handed over to the management of the Commissioners of Charities, matters were even in a worse state than now, and it was stated on the authority of the medical board that to enter it under the age of six months was certain death. The commissioners would appear to have used their best endeavors to introduce more satisfactory modes of management, but as they only came into power in April last, the time has been too short for many reforms to be inaugurated or for the effect of any changes for the better they may have initiated to be appreciated. Vigorous efforts towards reform are to be made by the charity commissioners, assisted by the mayor, and without doubt, now that public opinion has been aroused, everything in connection with the institution will be placed on a more sanitary footing.

Italian Foundling Hospitals.

While on the subject of children's hospitals it will not be out of place to make some remarks on institutions of this kind in Italy. The lamentable condition of foundlings' hospitals in that country has excited much strong feeling, and steps have been taken to thoroughly

ventilate the existing abuses. The question has been fully discussed in the Italian Chamber of Deputies, and a Royal Commission has been appointed to institute an inquiry into the working of foundlings' hospitals in all parts of Italy. The report on the mortality of the Naples foundling hospital in 1895 first opened people's eyes to the gravity of the situation. In that report it is stated that out of 856 infants received into the institution in that year, 853 died within the year, and that another has since died. The hospital authorities are severely blamed for their mismanagement and culpable carelessness. Dr. Titmanho, one of the hospital staff, writes in defense of himself and colleagues: he says that the mortality is hardly so high as stated, and he goes on to say that foundling hospitals, especially the large ones in a city like Naples, have to receive the refuse of all the miseries of all the physical and moral depravities which feed there. The fact is also put forward as an excuse, that the situation of the hospital is unsuitable, the wards small and badly ventilated, and the building in all respects is in a very unsanitary condition, and to these causes must be laid the high rate of mortality rather than to neglect. All this is quite plausible and tends to further prove that children's hospitals on a large scale are a deadly mistake.

Children and Poisonous Flowers and Plants. Buttercups and daisies are generally associated in one's mind with Wordsworth, children and Arcadian simplicity. It is difficult to conceive of anything hurtful or dangerous in connection with the pretty little yellow flower, but unfortunately it is not always the most modest and retiring plants or flowers that are the least harmful for example the deadly nightshade (*atropa belladonna*). Not that the buttercup can vie with the deadly nightshade in poisonous qualities, and still when consumed in sufficient quantities it will cause death. A proof of this has lately been afforded in England in the case of a boy who after eating some buttercups died within a few hours with all the symptoms of irritant poisoning. The buttercup belongs to the *ranunculaceæ*, and nearly all the members of this group possess poisonous qualities, chiefly of an irritant

nature, though in a few narcotic principles are to be found. Every year some children lose their lives by eating poisonous seeds or flowers, and care should be taken to exclude from gardens or parks where children play, plants or shrubs of a poisonous nature, as deadly nightshade, laburnum and yew. Fortunately buttercups, though nice to look at do not as a rule tempt children to eat them wholesale, otherwise the mortality from this cause would be much greater than it is at present.

**Unhealthy Pauper
Children in England.**

The question of the disposal of pauper children suffering from contagious diseases, and from mental or bodily defect has been exercising the minds of the authorities in England for some time. It was felt that something must be done to provide isolated accommodation for the first named. According to the *Lancet* an order was issued on April 2 by the local government board, placing the several classes of pauper children referred to under the care of "Metropolitan Asylums Board." A considerable amount of difficulty has been experienced with the getting at the approximate numbers of those who will have to be provided for, but these numbers for obvious reasons are probably rather underestimated than overestimated. At the present time it is reckoned that provision will have to be made for 800 cases of ophthalmia; 400 cases of ring-worm and contagious diseases of the skin; about 360 showing some mental or physical defect; an unknown number requiring convalescent treatment; a total excluding the latter which amounts to 1,710 children. The mentally and physically deficient are to be dealt with quite apart from the others under care of foster mothers in batches of 8 each.

SOCIETY REPORT.

THE ROYAL MEDICAL AND CHIRURGICAL SOCIETY, LONDON.

Meetings held on April 13, and April 26, 1897.

Non-Tubercular Posterior Basic Meningitis in Infants was the title of a paper read by Dr. J. WALTER CARR. His object was to show that there is a distinct form of meningitis, occurring almost exclusively in infants, which has not at present received adequate recognition. It was first described by Drs. Gee and Barlow in 1878 under the title of "The Cervical Opisthotonos of Infants" (St. Bartholomew's Hospital Reports). The disease mainly affects the posterior part of the brain, is entirely independent of tubercular disease, runs a subacute or chronic course with fairly characteristic symptoms by which it can be diagnosed during life, and presents very definite and constant post-mortem appearances, although its actual causation remains at present unknown. He narrated the histories of eleven cases observed by himself and compared with them those recorded by Drs. Gee and Barlow. All of the cases occurred in previously healthy infants under a year old. The onset was gradual in some, sudden in others, but in all the most constant and characteristic symptoms were severe vomiting, extreme head retraction, and stupor passing into coma of remarkably long—generally several weeks'—duration, the excessive head retraction persisting to the last. The cases all terminated fatally, none in less than five weeks, while some lived for three months or even longer. At the necropsies (ten in number) inflammation of the pia arachnoid was found over a very definite area at the base of the brain; hydrocephalus was present in all the cases, and in some closure of the openings between the fourth ventricle and the subarachnoid space. In no instance was there any sign of tubercular disease in the cranial cavity or elsewhere.

In considering the etiology he discussed the possible connections of the disease with injury, ear disease, and congenital syphilis and concluded that none of these can be really causes of the meningitis. He suggested that possibly there

may be some relation between the disease and epidemic cerebro-spinal meningitis, but that must be determined by bacteriological investigation, which had not yet been carried out.

As regards the diagnosis he described fully the chief points of distinction between this disease and other forms of meningitis, especially the tubercular variety.

In regard to prognosis he stated that, whilst the disease is usually fatal, recovery is probably not impossible, and a condition of ordinary chronic hydrocephalus sometimes supervenes.

As regards treatment, ordinary medical measures are of little avail. In two of his cases he had tapped the lateral ventricles without evil effects, and in one with distinct improvement, all acute symptoms subsiding, and the child living for several months. He had employed trephining in two other cases which proved fatal owing to too rapid an escape of fluid.

Dr. BARLOW was glad to find that the observations made by himself and Dr. Gee were confirmed by Dr. Carr. He had taken a great interest in the subject under discussion, and thought that the affection might be easily differentiated from tubercular meningitis. The leading symptoms were (1) cervical opisthotonos, which was early, constant, and progressive; (2), vomiting, and (3) a tendency to tonic spasm and rigidity as opposed to the clonic spasms of tubercular meningitis. The leading anatomical feature was a form of meningitis affecting primarily the region of the medulla and cerebellum, which quickly led to the formation of adhesions, and the resulting cicatricial thickenings caused retention of the cerebro-spinal fluid. The meningitis might extend forwards to the tip of the temporo-sphenoidal lobe or downward along the spinal cord. Similarly the cicatricial adhesions which resulted might be found in different parts, such as the foramen of Majendie, the foramen of Monro, or the aqueduct of Sylvius. In other cases the roof of the fourth ventricle was glued to its floor or complete adhesion of the spinal meningitis in the cervical canal at the level of the second or third cervical vertebræ was discovered *post mortem*. These appearances led him to accept Hilton's view as to the presence of some obstruction to the flow of the cerebro-spinal fluid in cases of chronic hydrocephalus, although the stoppage is not necessarily at the foramen of Majendie as Hilton seemed to think. This theory

coincides also with the fact that in hydrocephalus the exudation is non-inflammatory but apparently unchanged cerebrospinal fluid.

As regards the etiology he did not think congenital syphilis was of importance, but in some cases traumatism seemed to play a part. He recalled the case of a boy who was struck on the back of the head by a window-sash, and on the next day vomiting came on, retraction of the head followed, and he eventually died. At the autopsy well marked pachymeningitis was present at the base of the brain. Many of the cases had a history of preceding good health, but he had been struck by the fact that many had a history of catarrh preceding the onset of the illness. Catarrhs in children spread rapidly and in infants the middle ear was very susceptible to infection, the route from the back of the throat being a short one and organisms apparently finding the surroundings suitable for their development. If a specific form of otitis media is produced, the spread of the infection to the base of the brain is easy and rapid. His treatment recently had been based on this view, and he had seen more benefit from early puncture of the tympanic membranes than from any other measures. In infancy, therefore, all catarrhs should be carefully and energetically treated, and if symptoms of basic meningitis developed, puncture of the membranes should be employed. The operation in skilled hands was devoid of risk. As regards drugs, mercury was the best. The more serious surgical procedure of trephining had not in his experience been successful, perhaps because it was too long deferred. Mr. Ballance, at his suggestion, had devised a method of tapping the fourth ventricle, and in one case this operation, combined with tapping of the lateral ventricles, had proved successful. Even without surgical treatment some cases recovered, and he had observed that although no optic neuritis was present in the course of the disease, a special form of amaurosis might develop after the cessation of all acute symptoms.

Dr. LEES considered that non-tubercular basic meningitis was not rare in infancy, and occurred after that period, although not so frequently. He and Dr. Barlow had now a series of 100 cases with 40 necropsies. He agreed with the author that hydrocephalus is usually present, but did not agree with his views as to the cause being pressure on the

veins. The distention of the veins found after death was due to the intraventricular pressure, and the cause of the hydrocephalus was obstruction to the flow of the cerebro-spinal fluid. The fluid present was merely retention fluid and was not dropsical or inflammatory in origin. In determining the seat of the obstruction, the brain after death must be examined *in situ*. He described a method which he had devised for testing the patency of the foramen of Majendie and other openings in this manner. Unless this precaution were taken, the removal of the brain might lead to the tearing of the cicatricial adhesions. Optic neuritis was rare, and this was contrary to what might be expected in a form of chronic meningitis with great intracranial pressure. Nystagmus was common and was probably of cerebellar origin. The subsequent amaurosis, to which Dr. Barlow had referred, was usually transient, and was completely recovered from. Retraction of the abdomen was rare, but retraction of the head was often the first symptom, and might be so extreme that the head almost touched the buttocks. Tonic spasm of the extensor muscles of the upper and lower extremities was usually present and might be very persistent. At times this spasm might be intensified, due possibly to cerebellar influence. As regards the respiration he had noted a condition in which a pause was followed by three or four deep respirations of equal intensity, which he was accustomed to describe as "cyclical breathing."

Dr. NORMAN MOORE said that from his post-mortem experiences he thought it would be a mistake to try and give the same explanation of all of these cases. He suggested that some of them might be due to rheumatism affecting the meninges, and asked as to the condition of the endocardium. He had observed that the opisthotonos might be subsiding although the case eventually terminated fatally.

Dr. CHURCH was inclined to take a more hopeful view of the prognosis than the author. He recalled two cases which had completely recovered when they left the hospital, but he could not furnish any particulars as to their subsequent history. As affecting the prognosis he mentioned that in none of the cases which recovered was there any bulging of the fontanelle. He confirmed the statements as to the amaurosis without any preceding optic neuritis.

Mr. BALLANCE described the operation he had devised at the instigation of Dr. Berlow for tapping the fourth ventricle, which, however, had been employed independently by Mr. Parkin of Hull, and others. He trephined the occipital bone close to the foramen magnum on one or both sides. In consequence of the extreme head retraction it was sometimes necessary to have a trephine with a specially long handle. He related one case in which this operation, along with tapping of the lateral ventricles had been successful. One symptom not previously mentioned was a peculiar "chewing" or "champing" movement of the lower jaw, which was probably cerebellar in origin, as it was observed in affections of that organ. He remarked that there might be fluid, even pus in the tympanic cavity without anything abnormal being perceptible in the tympanic membrane. He had punctured the membrane in several cases with complete success. He suggested that a bacteriological examination of the cerebro-spinal fluid in these cases might be of importance in determining the nature of the affection.

Mr. RAYMOND JOHNSON had operated in two of Dr. Carr's cases, and he would not feel inclined to operate again in such cases if marked hydrocephalus was present. The rapid exit of the fluid was followed by collapse of the brain, convulsions, and death. Operative interference must be early if it was to be of any benefit.

Dr. ABERCROMBIE said that these cases seemed to occur in batches at certain seasons of the year. He had met with two in one family. Most of his cases occurred in the spring months. The youngest case he had met with was an infant of six weeks, in whom the affection ran a rapid and fatal course.

Dr. CARR, in reply, said that after the valuable elucidation of the subject by Drs. Barlow and Lees, he was prepared to discard the dropsical theory of the hydrocephalus and accept the view that it was retained cerebro-spinal fluid. He had not been able to trace any rheumatic associations in his cases, and the endocardium was always normal.

PRACTICAL NOTES.

Antitoxic Milk.—E. W. Saunders(*Med. Mirror, St. Louis, 1897, viii, 419*) says that the past year has witnessed an unabated interest in the study of the treatment and prophylaxis of diseases by antitoxic serum, and this has led to the further development of the subject: the proposed employment of antitoxic milk. The well-known immunity of the suckling to many diseases has been proved to be not inherent in the young organism, but due to the antitoxic value of the breast milk. Brieger long ago discovered that the milk of goats immunized to tetanus was antitoxic to the disease, and lately it has been found that young mice are rendered immune by the milk of an immunized mother. It is interesting to note that the milk of a nursing woman suffering from typhoid fever has the same agglutinating power as her blood, by Widal's test; also that her nursling's blood possesses the same property.

The possibilities in the direction of treatment by antitoxic milk are great, but in order to attain them we must first emancipate ourselves from the bondage of sterilization, and put before us the goal of original sterility in the milk supply for infant feeding. Within a short time Dr. Fisch of St. Louis will be prepared to furnish milk from animals immunized to diphtheria and tetanus respectively.

Chorea Minor.—Use the following as a sedative and antispasmodic for children of five to ten years:

℞ Lactophenini 0.15;
Quinin. hydrobrom. 0.15.

℞ Ft. chart. tales No. X (10).

Sig.—Take one powder three times daily.

For children of ten to fifteen years use:

℞ Lactophenini 0.8;
Quinin. hydrobrom 0.8;
Butyr. cacao 10.0.

℞ Ft. suppos. tales No. V (5).

Sig.—Use one suppository at bed-time.

ABSTRACTS.

HISTORY OF SPINAL SUPPORTS.

A. M. PHELPS (*Postgraduate*, 1897, xii, 183) considered the mode of supporting the vertebral column by braces. For the purpose of giving the facts regarding the history of spinal bracing, he stated some of the results of travels in the different parts of the world, and among all sorts of museums and junk shops. You will be perhaps surprised that aside from change of material down to the present time we have hardly brought out a single new idea. In this country a spinal brace much in use is known as the Taylor brace. It is supposed to have been invented by Dr. C. Fayette Taylor. It acts on the principle of antero-posterior leverage. He found away back in 1782, a picture of a brace invented by Bell (Fig. 1, 1), made of wood, and extending from the base of the skull down to the coccyx. It is in the shape of a cross, and buckles and straps confine the apparatus to the body at the pelvis and at the shoulders. It is nothing more or less than the antero-posterior support.

Fig. 2 is another picture showing a somewhat similar



Fig. 1—Bell, 1782.

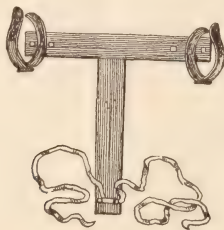


Fig. 1—Bell, 1782.

brace with chin-piece for cervical Pott's. It has sliding cross-pieces, and closely resembles braces used in this city at the present time, in principle. It was made in 1700 by Heister.



Fig. 2—Heister, 1700.

Figs. 3, 4, is another old brace, made in 1764 and 1767, by Levascher and Portal, with juremast attached.

About three or four years ago he invented an aluminum corset, and he presumed that he was the first one who had advanced the underlying idea of this corset. Yet in an old book he found a brace made of steel by Ambrose Paré in 1579, which is practically the same thing (see Fig. 5).



Fig. 3—Levascher, 1764. Fig. 4—Portal, 1767.

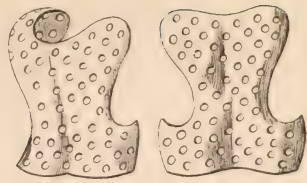


Fig. 5—Paré, 1579.

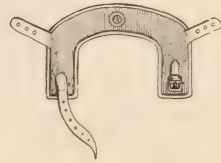


Fig. 7—Gilson, 1799.

Dr. L. A. Sayre invented the jurymast, and he is entitled to the great credit of introducing this apparatus to the profession of America. Yet here is a picture of an identical jurymast and corset, made in 1764 out of steel and cloth (see Fig. 3).



Fig. 6—Van Nuck, 1696.



Fig. 8.
De la Croix Skoe, 1725.

Again, Figs. 6, 7, are pictures illustrating a suspension apparatus very similar in principle and application to the one now used by Dr. Sayre and others. By Von Nuck, 1696, and Gilson, 1799.

The next is a picture of a steel brace adjusted to a beautifully fitting corset, and with a jurymast which cannot be excelled at the present day. We cannot improve either on the instrument or on the mode of its application, as depicted here. Figs. 3 and 8, Levascher and De la Croix, 1764 and 1725.

Portal's brace, 1767, is an elaborate brace; shown in Fig. 4. But the fatal objection to it, as to the others, is

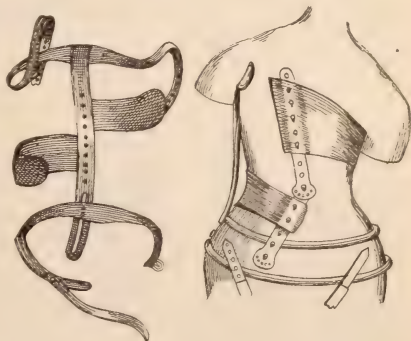


Fig. 11.
Von Gesscher's Skoe, 1792..

Fig. 10.

that the tilting of the pelvic band prevented much effect from the mechanical devices employed. It has, however, one point of great merit—a device for preventing or limiting this tilting

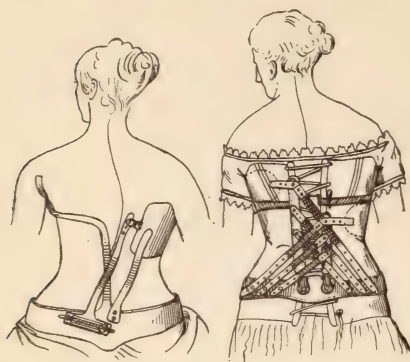


Fig. 9.—Lonsdale, 1847. Fig. 13.—Duchene, 1861.

of the pelvic band. A similar device is still used in the Hessian corset.

Fig. 9 is another device with a lateral pad and a crutch under the arm, with the same idea of making pressure, and so straightening the lateral curvature of the spine. Lonsdale, 1847.

Figs. 10, 11, pictures showing a simpler brace, on the same principle, 1792.

Fig. 12 is a picture of a brace in which the tilting of the pelvic band was to be prevented by an anchoring device passing down the leg. This would be a very good thing if the hip joint was ankylosed. Lorinser, 1868.

After a century or more of this kind of treatment, it was discovered that this elabo-

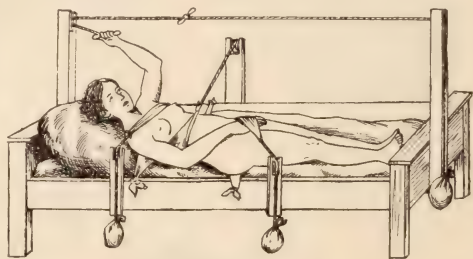


Fig. 18—Mayor, 1829.

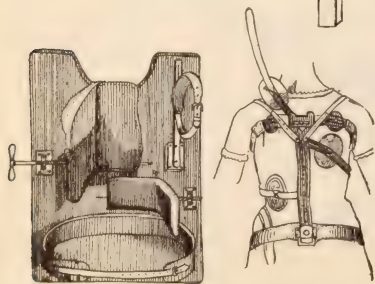


Fig. 16—Goldschmidt, 1864. Fig. 15.

rate bracing had had no good effect on the spinal column; hence arose another class of orthopedists—who favored the use of “elastic tension” by means of various rubber bands. Fig. 13 is a picture of such a brace. Duchene, 1861.

Mr. Barwell, of London,

thought that by hitching on to the opposite hip and inserting a rubber band, he could improve upon this treatment, but he did not.

Figs. 14, 15 is another brace, the idea of which was to pull the body against the brace, and so straighten the spine. Fig. 16 also a frame for making pressure.

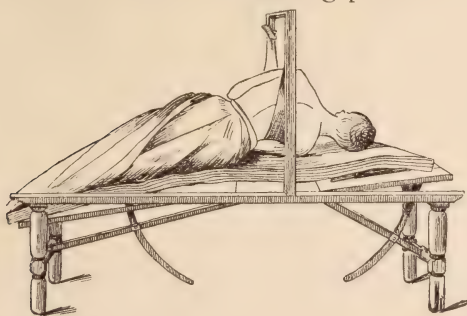


Fig. 17—Lonsdale, 1847.

spine. Lonsdale, 1847. Fig. (17).

Six or seven years ago, after much work, he (Phelps) devised a bed on a somewhat similar principle, and was on the point of publishing it when he found in London, in an old book published in 1829, an exact counterpart of it. (See Fig. 18.) It was an extension bed for the treatment of lateral curvature of the spine. With one arm the patient practices gymnastics, while in the recumbent position.

A surgeon then came to the conclusion that the curve in the spine could not be straightened by such appliances, and he was right; so he devised a bed in which the patient was to lie, while extension was applied in various directions. The principle, so far as it went, was right, but it did not straighten the

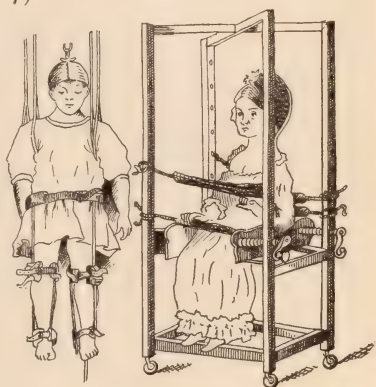


Fig. 20—Vene, 1783. Fig. 19—Lerasher, 1768.



Fig. 22—Darwin, 1801.



Fig. 28—Buly, 1887.



Fig. 29—Suyre, 1876.



Fig. 21—Bloemer, 1826.

We are again coming to the belief that gymnastics are all-important in the treatment of lateral curvature of the spine, yet he found a picture of an apparatus devised in 1743, by

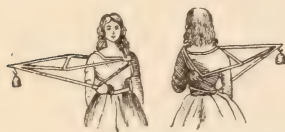


Fig. 26—Brown, 1848.

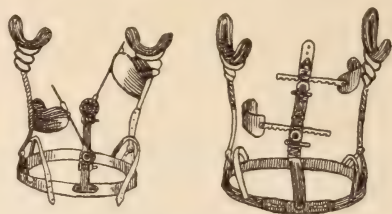


Fig. 27.

Andre, which illustrates the carrying out of such gymnastics. (See Mayer, 1829, Fig. 18.)

Many well-known and conscientious orthopedic surgeons have made various frames in which the patient is placed while attempts are made to straighten the spine by means of screws, the pelvis being held firmly. Fig. 19 is a picture of such an apparatus devised in 1788 for accomplishing the very same thing, and it or its modifications have been used until the present. Lerascher's Fig. 20 represents an extension apparatus for lateral curvature or Pott's, made by Vense, 1768.

We have in this country what is known as the Meigs-Case chair, by which the patient is enabled to walk and at the same time be supported. Here is a picture of a similar apparatus made in 1826, by Bloemer and Darwin, 1801 (Figs. 21, 22).

The reason these devices have all been discarded is that it has been found that they were without avail. It has only been toward the end of this century that we have found the true principle of bracing the spinal column, whether for Pott's disease or lateral curvature. Sayre taught us that suspension and fixation, while the patient is suspended, should be the

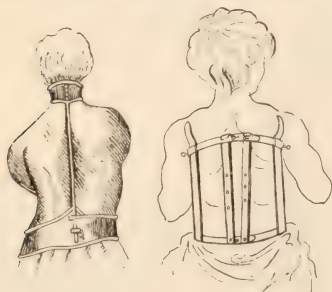


Fig. 25.

Fig. 24.

Kohler Pflug, Skoe, 1795. Schmidt, 1794.

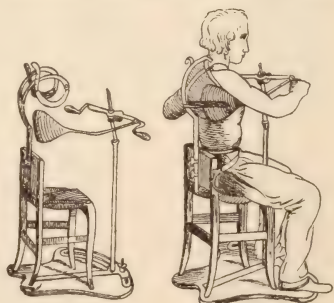


Fig. 23—Bonet, 1860.

fundamental rules of treatment. That is right. He also taught that plaster of Paris was the best thing to do it with, and that is right also, in Pott's.

We have gone over the history of spinal bracing briefly, and it must be evident to every one, that very few of these braces have any merit, yet all the steel braces used at the present day are based on the same ancient principles. When Sayre invented the plaster of Paris corset he gave to humanity an inestimable boon. When properly applied it gives excellent support.

All of the braces do not properly support, because the pelvic band tilts on the pelvis, and the anterior posterior supports only increase deformity in every case of Pott's attended with a lateral curve, and more than twenty-five per cent. of such cases have the lateral deviation.

Bonet, in 1860, added other attachments for making pressure, (see Fig. 23). In 1894 Schmidt invented the Knight's brace now in use in the Forty-second Street Hospital (Fig. 24). Kohler, in 1795, invented the collar and chin piece attached to a rod or mast, which was attached to a pelvic band, for use in high curves and cervical Pott's, exactly as it is used to-day by some orthopedists (Fig. 25). It bears the name to-day of Taylor, and others. Brown, in 1848, tried to straighten curves of the spine by means of lateral pressure, exactly as it is done to-day by the modern orthopedist (see Fig. 26). In 1863 Goldschmit invented the complicated brace for lateral curvature (shown in Fig. 27). This has been the brace from which many of the ideas for modern braces are taken. Fig. 28 is Beely's suspension apparatus, 1887, and Fig. 29, Sayre's, 1876. A glance will show the similarity of each, and also to Van Nuck's, 1696.

A UNIQUE CASE OF HYPERTROPHIC CIRRHOSIS OF THE LIVER.

DUMSTREY (*Deutsche medic. Wochenschr.*, 1897, *xxiii*, 27) reports the following case: A young girl, 17 years of age, was suffering with ascites. He found her in a semi-sitting position in a high-backed chair suffering from shortness of breath, very frequent and small pulse (118 to 120), cyanotic lips, and much edema of the skin of the abdomen. For weeks the girl had not stirred from this position, for every movement caused her such dyspnea. On puncturing the abdomen and removing about 25 liters of fluid, the lower edge of the liver was found to be hard and knotty, and reaching to the umbilicus. On the 7th of July a laparotomy was performed, and revealed an immense, hard nodular liver of twice the normal size, equally enlarged in every direction. In certain places, especially at the anterior lower edge, a large and firm infiltration and hypertrophy was found, so that the nodular edge of the liver might easily have been mistaken for a tumor. Schleich's injections were used in place of general anesthesia on account of the patient's hopeless condition. They gave perfect satisfaction.

There are different views as to the nature and origin of

cirrhosis of the liver, and certain authorities deny the occurrence of a pure hypertrophic cirrhosis. It is the author's conviction that this was a pure hypertrophic cirrhosis of the liver. The appearance of the liver was a dull greyish blue, it was hard and nodular, and evenly enlarged. The connective tissue surrounded its parenchyma in hard, broad bands, giving the appearance of a street, badly paved, with small stones and large inter-spaces. The color of the skin, though slightly yellow and earthy, did not present a pronounced icterus. The father of the patient had undoubtedly had syphilis, and the patient at birth had snuffles and suffered from it during the first few months.

The present disease appeared about two years ago. It was said to have commenced with a pleuritic exudation and an enlargement of the abdomen. The abdomen rapidly became larger, the umbilicus disappeared altogether, diuresis became less, great weakness came on, and gradually the patient suffered with dyspnea so great that she was unable to lie down. He now suspected hereditary syphilis. As the case appeared altogether hopeless, having been treated for one and a half years unsuccessfully with numerous drugs, he ordered inunctions of blue ointment on the fourth day after the operation. Four grammes of blue ointment was rubbed in a day, and $1\frac{1}{2}$ grains of iodide of potassium was given internally. The result was surprising: two weeks later when the patient was removed from the clinic to her own home, a very marked retrogression of all objective and subjective symptoms was noticed. The girl breathed more freely, cyanosis had disappeared, and the great edema of the legs had nearly disappeared. The girl was carefully kept on anti-syphilitic treatment after her return home and to-day the cure is nearly completed. It is remarkable that in spite of the large doses of mercury and potassium iodide taken no symptoms of intoxication at any time appeared.

CONTRIBUTION TO THE USE OF THYREOIDIN IN PEDIATRICS.

A. DOBROWSKY (*Archiv. f. Kinderheilk.*, 1896, *xxi*, 54) employed thyreoidinum siccatum, which comes in the form of tablets. Children under two years of age were given one-half to one tablet daily during the first week and one to two tablets later; older children received one to two tablets during the first week, and three to four tablets daily during the following weeks; the tablets were given for at least three weeks, but as a rule they were taken for three to four months. Nine cases were treated for struma, eight for prurigo, one for obesity, and twelve for stunting of psychic development. The following report is made by the author relating to the action of thyreoidin in children: Thyreoidin produces in children a more or less considerable loss of weight; the maximum of the loss of weight was reached in the fourth week of treatment and varied between 0.50 to $3\frac{1}{2}$ kilogrammes. After

discontinuing the remedy an increase in weight would again occur within one to two weeks. In children suffering from struma thyreoidin causes a marked diminution, but not a total disappearance of the swelling; this action of the drug is seen after two or three days, and reaches its maximum in three weeks. The diminution in the size of the neck was one to four cm. in the author's cases. Tachycardia was observed without exception in all the children, without any subjective symptoms. It lasted during the whole period of treatment and ceased with the withdrawal of the remedy. Prurigo (Hebra) was rapidly and favorably influenced by thyreoidin, the itching of the skin vanishing and the pruriginous nodules disappearing. This result was obtained in all cases within a few days. Not a single case, however, escaped a relapse after the drug was discontinued; the relapse made its appearance in from one to thirteen weeks. A renewed exhibition of thyreoidin tablets again induced amelioration. The feeding of thyreoidin tablets to idiotic and cretinoid children was only of very slight benefit; in two cases only (out of twelve) an improvement in the carrying of the head and body was noticed, and in one case there was also an increase in intelligence. A relapse was not observed in the latter case after discontinuing the tablets. He could not observe any influence on the condition of the blood from the use of thyreoidin. Diuresis and thirst, as well as the elimination of phosphates, were nearly always increased during the treatment. Indican could always be found in the urine and was frequently increased. Albuminuria and glycosuria were not observed. When carefully administered (gradually increasing the dose) the remedy is harmless in children providing the heat's action is carefully watched (idiosyncrasy); should the heart become markedly irregular, the drug must be discontinued at once. In the majority of cases no disagreeable symptoms will be met with during treatment.

REMARKS ON THE TREATMENT OF ATROPHIC INFANTS WITH THE COUVEUSE.

A. JOHANNESSEN (*Jahrb. f. Kinderheilk.*, 1896, xli, 300) reports the successful results obtained by him in ten atrophic infants, treated by means of the couveuse constructed by Odile Martin. The ages were from five to twenty days. Only three were older, the oldest one being three months. Six of these were of premature birth and in seven symptoms of congenital syphilis were discovered. In the majority of cases the temperature was low, as low as 34.5 C., besides, cyanosis, sclerema, and disorders of digestion were present. The temperature of the couveuse was as a general rule kept at 30° C., with some older children it was kept at 25° to 26° C., and moisture of the air was kept somewhat above normal.

The following were the usual results: In the beginning of the treatment in the couveuse, an appreciable increase in weight

and rise of bodily temperature may take place. The result is seemingly very favorable after one-half to one month. If we observe the children, however, for a sufficient length of time, grave symptoms will be found to make their appearance, arising in part from the syphilis and in part from the digestive canal. It will be found impossible to raise the temperature of the child, or to remove the cyanosis permanently. Experience teaches that the greatest danger threatens these devitalized children through artificial feeding. Occasionally it may be possible to keep them alive by feeding them at the breast. In some cases good results may be obtained from the use of the couveuse in addition to feeding them at the breast.

A CASE OF HEMORRHAGE FROM THE CAROTID IN NECROSIS OF THE MIDDLE EAR—OPERATION.

ABBE (*Zeitschr. f. Ohrenheilk.*, 1896, *xxix*, 222) reports the case of a child two and one-half years of age, which for the space of one year was afflicted with a fetid otorrhea. A profuse bleeding suddenly occurred from the diseased ear without any known cause, and seemed to be due to an erosion of the lateral sinus, secondary to a necrosis of the temporal bone. The jugular vein was tied, the sinus opened, and a tampon applied. After two days the patient died. At the autopsy the carotid artery was found to be plugged by a thrombus of septic origin, which obviously had caused an embolus to lodge in the middle cerebral artery, and thus had been the cause of a cerebral abscess and necrosis of the cerebral tissues. In the tympanic cavity was found a small sequestrum, seemingly a part of the semi-circular canal, lying in contact with an erosion at the bend of the carotid. It occupied about one-third of its circumference.

SPLINT FOR FRACTURE OF THE FEMUR, ESPECIALLY IN CHILDREN DURING THE FIRST YEARS OF LIFE.

HAUN (*Centralbl. f. Kinderheilk.*, 1896, *i*, 303). The plaster of paris bandage for children of this age is too heavy, and easily becomes softened. An extension apparatus is generally impossible, as the child cannot very well be kept clean and requires constant supervision of the physician, which is often impossible. The combined glue and splint bandage used by the author has none of these objections, and possesses the advantage that the material can always be obtained. The necessary articles, old linen, glue and a few iron hoops from barrels 10 to 12 mm. wide and 1 to 1½ mm. thick are to be found everywhere.

A thin barrel hoop, which can be easily bent with the hands, is fitted to the body between the edges of the ilium and the arch of the ribs. A hole is made in each end of the hoop, so as to close the hoop later on. A splint is now soldered to the hoop for the anterior surface of the leg. Then a splint is adapted to the posterior surface of the limb, which should also consist of thin barrel

hoop. After this has been prepared, the glue bandage, consisting of strips of old, coarse linen, 4 cm. broad and 30 to 50 cm. long, and thick glue is next applied in thin layers, reaching from the (padded) edge of the arch of the ribs to the foot (inclusive). The buttock is left free on both sides of the anus in such a manner that the portion of the posterior leg splint which passes over the buttock does not receive any padding of the glue bandage at this place. In place of this, the external side of the glue bandage, and especially the portion over the bend of the knee, is strengthened. Now the splint is placed on the leg and around the body. The hoop is tightly drawn and fastened by means of wires. The splint for the anterior and posterior surface of the leg must naturally be placed in their proper position in the median line. These splints are now immobilized by a second linen and glue bandage. After the bandage has been applied, the limb must be fixed in the proper position and extension, made by weights, until the glue-bandage has become firm, which usually takes twenty-four hours. During the time of extension the bedding of the child should be frequently changed, as otherwise the moist bandage does not harden. After 24 hours the extension is removed, and the child may be carried about. Scrupulous cleanliness is of course still necessary, to keep portions of the bandage from becoming soaked; a slight softening of the latter will do no harm, as the iron support is sufficient to keep the splint in place.

THE CELLULOID MULL-BANDAGE.

LAUDERER and KIRSCH (*Centralbl. f. Kinderheilk.*, 1896, i, 307) say that the plaster of paris bandage is too heavy and not sufficiently stable towards the secretions of the body. The substitutes, though lighter and more permanent, are much slower in hardening. The celluloid mull-bandage, which is made of mull-bandages, saturated in a solution of celluloid in acetone, is free from these disadvantages, and has given perfect satisfaction to the authors. Its technic is as follows: Celluloid plates are cut into small scraps with a pair of strong shears or the celluloid plates left over from the manufacture of other orthopedic appliances may be used. These pieces are dissolved in acetone, by filling a large, wide-mouthed bottle up to about one-quarter its height with scraps of celluloid, and then filling up the remainder with the liquid. The flask should be well stoppered, otherwise much of the fluid will evaporate. From time to time it is opened, and the contents are stirred with a rod. A piece of felt or flannel of not too great a thickness is now spread on a plaster of paris cast. This layer may also be omitted in the interest of lightness if the apparatus is to be worn over the shirt. In that case a mull bandage is firmly rolled on the plaster cast in such a way that the turns will overlap about half-way. The celluloid-gelatine which has been previously prepared is now applied thoroughly to this layer of mull. The hand used for this purpose had better be encased in

a leather glove, as the gelatine adheres very firmly to the fingers and can only be removed by washing with acetone. These two layers (mull-bandage and celluloid solution), are to be alternately applied until the required thickness is reached. This, in smaller casings, is attained after 4 to 6 layers, but a supporting corset for an adult needs at least 10 layers. Should the casing, after removal from the plaster cast, not seem to be strong enough, it can be returned and a number of layers can be added, which will adhere well to the bandage. The outer layer must not be composed of the mull-bandage, but should consist of well applied and thoroughly rubbed in celluloid gelatine, so that the exterior of the shell will have a nice polish and great hardness.

This bandage is cheap, light and impenetrable. It has a firmer consistence than any other variety of bandage. It does not harden quite as rapidly as the gypsum-bandage, but much more rapidly than any of the other fixation bandages. In 3 to 4 hours it is perfectly dry. Within one and a half hours it was found to be firm enough to be fitted to the person. These shells have been applied (1) In six cases of tuberculosis of the wrist-joint; (2) In five cases as corsets, once in a case of spondylitis, the others were cases of scoliosis; (3) In a case of bloodless reposition of a congenital dislocation of the thigh-bone (according to Lorenz), the plaster of paris bandage was substituted after eight weeks by a celluloid-mull bandage.

THE EFFICACY OF ANTITOXIN IN DIPHTHERIA OF THE EYE.

E. AMMAN (*Die Therapie der Gegenwart*, 1897, xxviii, 224) in the first instance corroborates the experience of many others that a diphtheritic conjunctivitis will easily and rapidly heal under the influence of Behring's antitoxin without serious involvement of the cornea. (A three per cent. solution of boric acid was locally applied in addition to the injection of antitoxin.) On the other hand, it was plainly demonstrated in five cases that after the cornea has once been invaded by the inflammation, even if there is only a small ulcer at the edge, the preservation of the cornea becomes doubtful, and the result is seemingly not influenced by serum injections. The question arises whether the affection of the cornea is really dependent on the Loeffler bacillus. In the last case, which had been most closely observed bacteriologically, there were raised from cultures taken from the cornea a large number of colonies of virulent diphtheria bacilli, aside from the strepto- and staphylo- cocci. While these by themselves are certainly able to cause a marked ulceration on the cornea, the corneal inflammation in diphtheria runs such a typical course that we must conclude it has a specific origin. We are accustomed to suspect the bacillus of diphtheria only where we are able clinically to demonstrate a membrane, and a necrosis of the mucous-membrane or of the skin. May it not perhaps be possible that the cloudiness of

the cornea, which antedates the ulceration, depends upon the same process? After the bacilli of diphtheria have once robbed the cornea of its natural power of resistance, a small loss of epithelium will be sufficient to open the gate to the distinctive action of the innumerable strepto- and staphylo- cocci which are present. If the cornea is still intact or only slightly cloudy, the serum is able eventually to end the process. If, however, the streptococcus pyogenes has already established itself on the part injured by the diphtheria bacilli, the antitoxin is, of course, now unable to stop the ravages of the former. At all events the Loeffler bacillus in the corneal tissue is not present by chance, but plays an active rôle in the destructive processes of the cornea. Sourdille came to the conclusion that those cases in which streptococci, or streptococci and staphylococci, were found with diphtheria bacilli, were more severe in their course than those in which diphtheria bacilli are associated with staphylococci. Uthhoff, on the other hand, found this triad present in mild cases of diphtheria of the eye, in so-called croupous conjunctivitis, in which the disease of the cornea did not extend. Uthhoff is more inclined to the view that the corneal affection in diphtheria may in all probability be traced back to the contemporaneous appearance of diphtheria bacilli and pus-producing bacteria.

A CASE OF HEMOPHILIA.

P. BIENWALD (*Deutsche Med. Wochenschr.*, 1897, *xxiii*, 28) reports the case of a boy suffering from hemophilia, who met with a rather severe injury in the temporal region. The wound was about one and a half cm. long. After numerous unsuccessful attempts had been made for two days to arrest the flow of blood, and a tampon of cotton saturated with iron chloride had been applied without success, and the patient was in a serious condition of exhaustion, and fever, he injected into the bleeding wound a few grammes of fresh blood, immediately after it had been taken by a Pravatz syringe from a vein of a healthy female. The new blood coagulated in a few minutes and the hemorrhage, after the application of a light bandage, ceased permanently. He thinks that the foreign blood-clot either acted as a hemostatic elastic tampon which insinuated itself into the crevices of the tissue, or the new blood added certain ferments, the absence of which in the blood of persons suffering from hemophilia, prevents the formation of thrombi.

A CASE OF POISONING WITH BENZINE IN A CHILD.

V. BOLTENSTERN (*Centralbl. f. Kinderheilk.*, 1897, *ii*, 75) says that a well-developed child, three years old, suffering from whooping-cough, was given by mistake a teaspoonful of benzine on October 7, 1896, at about six o'clock in the evening. The mistake was at once noticed and the child was induced to drink large quantities of hot milk. Although the child became somewhat

drowsy, the respiration and the pulse remained unaffected. The breath smelled strongly of benzine. The temperature of the skin was normal to the touch, and the bodily temperature was not raised. The pupils reacted well to light, and the urine contained no albumin or sugar. As no alarming symptoms appeared, flushing the stomach was not attempted, nor was any other medicine administered. The only symptom presenting consisted in an increase of rectal tenesmus and slight pain in the region of the stomach. Diarrhea made its appearance one-half hour after the ingestion of the benzine. The stools were liquid, of a greenish color and abundantly mixed with slimy shreds. Their odor at first was that of the benzine. The stools were frequent and small in amount. This continued during the following day. There was a moderately coated tongue and a loss of appetite. The odor of benzine in the feces disappeared on the following day, leaving in place of it, an extremely strong, disagreeable fecal odor. On the second day after the ingestion of the benzine, these symptoms also passed off, and the child was again perfectly well.

We had to deal in this case therefore with only a mild form of acute gastro-intestinal catarrh. It may be that the large quantity of hot milk which was administered immediately after the benzine, prevented absorption of the latter and thus prevented the appearance of graver symptoms.

A CASE OF POISONING BY BENZINE.

WITTHAUER (*Munch. Med. Wochenschr.*, 1896, *xliv*, 915) reports the case of a boy, one year and nine months of age, who had swallowed an unknown quantity of benzine one-half an hour before being brought to the hospital. He was found lying on the floor, loudly screaming. The child was comatose, the pupils dilated to their fullest extent, the face cyanotic, the skin cold, and the respiration shallow and rapid. The pulse could hardly be felt. The stomach was at once washed out, until the washings did not have the slightest odor of benzine. A teacupful of milk was then introduced into the stomach, and a hypodermic injection of ether given. As respiration did not improve, the boy was placed in a warm bath and cold affusions given; with each affusion a deep inspiration and a loud moan was heard. His condition remained precarious until evening, when the pulse improved, the skin became warm, and the pupils again reacted to light. The urine had been passed spontaneously, and contained neither albumin nor sugar. The temperature was 38.7° C. After passing a very restless night the patient seemed better, and responded when spoken to. Temperature, 37.5° C., pulse increased, and a movement of the bowels was obtained by a glycerin injection. The urine is passed involuntary. In the evening the temperature again rose to 39.2° C. Nothing abnormal could be discovered in the internal organs. Milk is retained in large quantity, and wine is also readily

taken. On the following day the patient's mind was clear, the temperature, however, rose to 40.2° C. at noon, without any assignable cause, and there is no reason to suspect pneumonia. The night was passed quietly, morning temperature was 37.7° C., evening temperature 38.2° C. General condition good. The patient plays and talks. From this time on convalescence was rapid, and the boy was dismissed cured in a few days.

The reporter is of the opinion that the irrigation of the stomach saved the child's life, removing a large portion of the poison.

The rise of temperature was interesting. In all probability it was due to an acute gastritis which was caused by a slight erosion of the mucous membrane of the stomach.

THE VARIATIONS IN WEIGHT OF INFANTS DURING THE FIRST TWO WEEKS OF LIFE.

O. SCHAEFFER (*Archiv. f. Gynecologie*, 1896, lii, 282) obtained the following results from weighing 592 healthy children at full term on the seventh and fourteenth day after birth:

1.—Only fourteen and one-half per cent. of the children had regained their first weight or exceeded it on the seventh day, and continued to increase up to the fourteenth day.

2.—Forty-one per cent. regained or exceeded their post-partum weight only on the fourteenth day.

3.—Forty-four and one-half per cent. remained below their initial weight on the fourteenth day; six per cent. only had once slightly exceeded the initial weight during this time.

4.—The minimum weight occurred on the third day; the initial weight was regained on an average on the ninth or tenth day; the maximum weight was reached on the tenth to twelfth day.

5.—The less the propensity to an increase in weight the more irregular was the limit for the occurrence of the minimum, (a number of times even at the fourteenth day), and of the maximum weight.

6.—Boys presented less variations in the increase or decrease in weight than girls.

7.—Those who at birth were notably above the medium weight, especially girls, showed a greater tendency to decrease in weight.

8.—Influence of the mother: Primipara below 55 kilogrammes in weight and under twenty years of age, gave birth on an average to lighter children, having the least predisposition to increase in weight. So also did sickly and hard-working mothers, receiving insufficient food. Vice-versa, children of primipara and pluripara, weighing over fifty-five kilogrammes and between twenty and twenty-nine years of age, were found to be most favored as regards increase in weight. These women also gave birth to more boys. The rapid recovery from child-bed of the mother

(comparative weight taken in ninety-four cases), did not exert any influence on the weight of the child.

9.—The advantage of robust fathers in favor of the weight of the child was usually offset by debility of the mother. Race, people, and branch of family will exert their influence.

10.—The actual loss in weight up to the third day was greater, and the increase in weight up to the seventh day was less than the difference in weight between the milk injected and the excrements (including respiration and perspiration). Difference on the third day, 184.5 grammes; on the seventh day, 315.6 grammes; nevertheless, the oxidation of the milk compared with that of all excrements from the beginning represented an excess, (12171 to 265877.5 calories daily, increasing from the first to the fourteenth day). This excess, which goes hand in hand with decrease of bodily weight, served for the production of heat. For the transmutation of the poikilo-thermous fetus into a homoio-thermous infant a rapid burning up of the childish organism takes place in the first few days.

11.—Consequently, there was a parallelism of the curves of weight, temperature, and of the general excretion.

THE PROPHYLAXIS OF LYMPHATIC ENLARGEMENTS IN THE SKIN DISEASES OF CHILDREN.

STEINHARDT (*Centralbl. f. Kinderheilk.*, 1897, ii, 73) says that the eruptions of the skin, particularly in the infant at the breast, are probably the most frequent cause of lymphatic enlargements, and we are as little justified in looking upon chronic hyperplasia of the lymphatic glands as a symptom of scrofula as we are in regarding intractable eczema of the face and head inevitably as signs of that dyscrasia. After he was convinced of the extraordinary resistance to treatment of these eruptions, he concentrated his energies on preventing the infection of the lymphatics, or, at least, to reduce this to a minimum. He thinks that the result of his efforts has been satisfactory. Three cases came under his care in the early stages. The lymphatic glands in two cases were wholly protected from infection, and in the first case, which was remarkable for its unusual stubbornness, the result was nearly perfect. Only two or three pea-sized glands remained permanently. The eruption as regards intensity was kept within moderate bounds, and neither the accumulation of pus, so frequently seen below the greenish colored crusts, nor the fetid odors so often present, were seen; the itching also was markedly diminished.

In the treatment of these children he lays especial stress on relieving as far as possible the tendency to itching, and to prevent the infection of existing or newly-made lesions by scratching. The child was ordered a daily bath to keep the healthy parts clean, and its hands, the nails of which were thoroughly and frequently trimmed, were well cleansed with soap and water, and kept clean. The body linen and bedding were changed daily, the toys frequently

disinfected, and all contact of the diseased parts with food or drink was carefully avoided. The affected parts were treated with cool applications of lead water for an hour at a time, and then less frequently. During that part of the day in which the itching, as found by experience, was at its height, this was followed by a liniment of

℞ Menthol, 1.0 to 2.0
Acidi Salicylici, 0.5
Olei lini,
Aquæ calcis ʒā 50.0

which ameliorated the itching. To every bleeding part or recent excoriation produced by scratching or by the removal of the crust a powder was applied containing some antiseptic, for example, equal parts of oxide of zinc and starch, with the addition of boric or salicylic acid or iodoform. Even pure iodoform was dusted on it. In place of the dusting-powder, but much less frequently, firmer ointments containing the antiseptic drugs previously mentioned, as well as balsam of peru and ichthyol were used and found beneficial. Transparent crusts were not disturbed, but the opaque ones were removed, and the pus under them. He mentions as interesting in regard to the etiology of this form of eczema, that he was able in a number of cases to determine its relation to constipation, and found it to disappear when the movement of the bowels became regular and softer. For this reason, all cases which presented sluggish and irregular stools should be placed upon a suitable diet, and other auxiliaries to nutrition should be employed.

FOUR CASES OF HYSTERICAL PARALYSIS IN CHILDREN.

B. LEICK (*Centralbl. f. Kinderheilk.*, 1897, ii, 85) reported the cases of four children from the lower classes, all of them boys ranging in age from four and a half to twelve years. A hereditary taint could only with certainty be established in one case. There developed suddenly (twice) or in the course of a few days (twice) a more or less marked paralysis of the lower extremities. As the exciting cause of the outbreak of the latent hysteria, a dental affection accompanied by fever could be demonstrated in one case, which was similar to case three, in which a seemingly febrile condition, probably due to a rheumatic diathesis, antedated the paralysis; in case two, pain was complained of in the abdomen, the loins, and the bend of the knees on the day previous to the occurrence of the hysterical disease. In case four the patient had over exerted himself on the day previous to his illness.

Besides the paresis of the extremities, two patients presented symptoms of slight anemia, one patient of vertigo, formication in the lower extremities, and increased somnolence. One patient complained of slight cardiac palpitation, one of incontinence of

urine; in three patients marked increase of the patellar reflex was present, and in one patient there was a decrease in this reflex. In all other respects, a normal condition in all four patients was present, and nothing was discovered which could account for the paralysis. Although the purely functional character of the disease was evident, this conclusion was confirmed by the following symptoms in three of the patients: They could not stand, walk or put one foot before the other, but were able when lying in bed to make easily all movements. This could only be hysteria. The most positive proof of the diagnosis was, however, the successful treatment by faradization and baths. A cure was obtained within a few days. The real curative agent of course consisted in convincing the patients that they were able to walk. This simple assurance would not have been sufficient, the patients must see that something unusual was being done with them. Here the action of the faradic current came in, which makes a deep impression on their minds. In this manner he succeeded after one to three days in curing all of his four patients, although the paralysis had previously existed from $1\frac{1}{2}$ to 6 weeks.

RHINOPHARYNGOLITH.

JANATKA (*Centralbl. f. die Medic. Wissensch.*, 1897, xxxv, 30). A boy, nine years of age, began to suffer gradually from a nasal voice, nasal cattarrh and a disagreeable odor from the nose. It was said that he had swallowed a thimble when two years of age. On examining the nasal cavity he discovered a tumor extending to the posterior wall of the pharynx. The tumor was of a firm consistence. It was removed with Jurasz's forceps, and consisted of a hypertrophied tonsil of the pharynx, and the thimble which in the course of time had become incrustated with carbonates and phosphates. Foreign bodies in the nasopharyngeal cavity are of the greatest rarity, and this case is of particular interest on account of the time (8 years) which the thimble remained undiscovered.

A CASE OF POISONING FROM THE BERRIES OF BELLADONNA.

E. BERGGRUN (*Arch. f. Kinderheilk.*, 1896, xxi, 1 and ii) relates the following case:

On Sept. 15, 1896, a boy eleven years old entered the polyclinic, where he at once attracted general attention by the redness of his face and his continued senseless talk. His mother, who accompanied him, said that the boy had on the previous day at a picnic gathered some berries, and ate abundantly of them, at the same time giving some to a younger brother. Both children, on returning home, had complained of great nausea and vomited a few times. They slept restlessly. The older boy had been delirious during the night, talking irrationally, and could only with difficulty be kept in bed.

The patient, whose face, neck, and upper portion of thorax is of a deep red color, stands erect with head bent forward, and is talking continuously in an unconnected manner; on being questioned, his answers are altogether irrelevant, and he is not able, in spite of energetic attempts, to concentrate his thoughts. His eyes are fixed and staring, the pupils dilated to their utmost, and totally devoid of reaction; the patient is not able to stand alone, reeling as one drunk, and shows a decided tendency towards moving in a circle. Having been put to bed, he collapses as if exhausted, but a casual external irritation is sufficient to put him into the greatest excitement. At the time of his admission (noon) his temperature was 39.5°C ., the pulse 148, the pulse-wave high, and the arterial tension very great. The heart-sounds are loud and flapping, the second sound is particularly loud. The abdomen is enlarged, very tense, and the region of the stomach is especially prominent and slightly painful to pressure. The urine is dark, having a large amount of sediment.

The stomach was irrigated. A large amount of small black kernels, tough and hard to the touch, are brought up, besides the husks of fruit, which prove to be quite hard. The stools are found also to be loaded with these. After the stomach had been washed out, the patient went to sleep for a short time, but frequently woke up in great excitement, continually attempting to leave his bed and the room. He hides under the quilt and believes himself surrounded by enemies, etc. The redness of the integument has rapidly increased, so that in the evening the whole body of the patient presents an even scarlatinous rash, which is most intensely marked on the neck, the sides of the thorax, and the inner surface of the thighs. The pulse, at first full and strong, became weaker during the day; the pulse-wave lower, easily compressible, and the number of beats 120 to 96 to 84. Towards evening a subcutaneous injection of pilocarpin had to be given the patient, whose excitement had increased more and more, and who imagined himself surrounded on all sides by ghosts. The pilocarpin produced a moderate degree of perspiration. Besides this, he received a cathartic, which was followed by copious evacuations of the intestine. The stools still contained a large amount of these kernels. Gradually the excitement now subsided, the patient remained quietly in bed, in an exhausted condition, the pulse improved, the temperature was 38.2°C . in the evening, and the respiration slower. The greater part of the night was passed without sleep, but quietly.

On the following day the scarlatinous redness had disappeared with the exception of slight traces in the face and on the trunk. The pulse is moderately full, 86 to the minute, the temperature normal, the pupils however still do not react and remain dilated to the same extent as on the previous day. Confusion of the mind is less, and the patient gives rational answers to simple questions, although slowly and laboriously. The redness gradually

disappeared altogether, and only the staring look and the presence of kernels in the feces were a reminder of the previous condition. On the third day from his reception the patient was able to leave his bed. A histological examination of the berries confirmed the correctness of the diagnosis.

ACUTE ALCOHOLIC POISONING IN CHILDHOOD.

KORN (*Therap. Monatshefte*, 1897, i, 55) made the following report in relation to a case of alcoholic poisoning observed by him in a child six years and ten months of age. The child had imbibed about one-quarter of a liter of Kümmel brandy representing 29.67 per cent. in volume of alcohol. The intoxication from the initial vomiting and including the following deep narcosis lasted about ten hours. Only then did tonic and clonic convulsions make their appearance. These occurred with such fearful violence that they simulated tetanus. Next to the muscles of the extremities, the extensors of the trunk were mainly involved, thus causing opisthotonus. There was deep coma present, and sensibility was totally abolished. Respiration and cardiac action was greatly accelerated. The heart beat violently against the chest wall, and respiration was accomplished only by the help of all the auxiliary respiratory muscles. The child could not be awakened for a moment from its comatose condition, either by the bath and cold affusions, the usual irrigation of the intestine, inhalation of ammonia, or by the other restoratives employed. This picture remained stationary during the whole of the following day. The breathing then began to improve and became less laborious; next the heart action became quieter. Tetanus at last gave place to a relaxation of the extensor muscles, and was replaced by more clonic convulsions; the coma, however, remained. On the fourth day improvement finally occurred in this respect, but it was not of long duration. This temporary remission of symptoms has been frequently observed in cases of poisoning, and one is inclined to refer this remission to a temporary abeyance in the absorption of the poison. Although complete insensibility was still the most prominent feature on the fifth day, there were occasionally clear moments present. The convulsions, also, had taken on a different character, and the patient frequently made efforts to grasp something. From the sixth day the condition gradually went on to recovery, and on the eighth day the boy was so well that he could no longer be kept in bed.

We frequently find a rapid recovery in cases of poisoning, and, therefore, it was taken for granted that this was such a case. Unfortunately this was a mistake. The pathological process which had attacked the meninges did not pass off without leaving its trace. After symptoms of depression in the form of a weak memory and frequent spells of extraordinary quietness had been observed for two weeks, the inflammatory irritation of the men-

inges of the brain showed itself in convulsions lasting five days, involving almost exclusively the muscles of the head. This was accompanied by insensibility. After the most careful nursing the child recovered.

Korn then tabulated the pathologico-anatomical findings in acute alcoholic poisoning, and mentioned cases from literature similar to his own. The treatment of acute alcoholic poisoning, as of all other diseases, is to be based on the anatomical changes. As we are helpless in cases of fatty degeneration of the liver and the muscular tissue of the heart, which always run a violent course, the treatment must be directed against the enormous blood-stasis of the brain and its meninges, which is usually present; and in the same manner we must combat a threatening paralysis of the heart and the respiration. The first indication, when called early enough, is to evacuate the stomach by emetics or the stomach pump. As vomiting has generally occurred freely and spontaneously, restoratives as black coffee, inhalation of ammonia, liquor ammonii acetatis, camphor, etc., are to be freely used. Under certain circumstances artificial respiration is indicated. Where the condition permits, hot baths, accompanied by cold affusion to the head, and the continued application of the ice-bladder to the head and heat to the lower extremities, will meet the indications which result from the hyperemia of the brain and meninges. Korn especially recommended from his experience in this case caffeine with antipyrin in careful doses suited to the age. This case taught the necessity for looking for a long time for symptoms which are caused by a hyperemia of the brain and its coverings, and showed how long the economy could be disturbed in its healthy equilibrium by the ingestion, even once, of an excessive amount of so volatile a poison as alcohol.

THE USE OF IODINE AND THE IODIDES IN PEDIATRICS.

COMBY (*Archiv f. Dermatologie u. Syphilis*, 1897, *xxviii*, 285) finds in iodine one of the best and most certain antiseptics and a good remedy to influence the nutrition. Iodism is considered a rare occurrence in children, and in very young infants it may be altogether excluded. The reason for this is the rapid elimination of iodine in childhood. This has been experimentally demonstrated.

He next discusses the indications and contraindications for the administration of iodine. Iodine is considered a specific in hereditary syphilis and in the tardy symptoms of acquired syphilis. In the initial and secondary stages mercury alone is sufficient; in the tertiary stage, iodide of potash is indicated. An exception is made in the hereditary syphilis of the new-born in whom the exhibition of iodide of potash should be begun early. Not only should positively syphilitic children receive iodine, but all who have suspicious symptoms, as coryza, exostoses, etc., or a cach-

exia which appears without apparent cause, or when the child is prematurely born, or the mother has had frequent abortions. In convulsions, pseudoparalysis, meningeal symptoms, etc., it is also indicated. The administration of iodine in children with gummy tumors, disease of bone, perforation of the soft palate and hemoglobinuria, is, of course, clearly indicated. Finally, in all parasymphilitic symptoms, (Fournier), as hydro-cephalus, cerebral tumors, partial epilepsy, etc., iodine is valuable. From the reports on the use of iodine in the various diseases of childhood the best results have been obtained in actinomycosis and ring worm. Favorable results were followed in *varrucæ planæ* of the face and hands and in *pityriasis versicolor*. Lastly, it is employed with advantage in all forms of stomatitis and in diphtheria of the skin. Contraindications for the internal use of iodine in children are tuberculosis, cachexia. (not due to syphilis), and itching skin eruptions e. g.—urticaria, eczema, prurigo, acne, furunculosis, etc.



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ORIGINAL ARTICLES.

ACUTE ABDOMINAL DISTENSION IN CHILDREN.

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ACU TE abdominal distension as a complication of diseases which do not primarily affect the gastro-intestinal tract or peritoneum, has received but little notice in the literature of diseases of children, although it is especially prone to occur in the earliest years of life. The condition which is here described is a rapid and often extreme distension of the abdomen, which supervenes usually in the course of a severe illness, and generally, but not always, shortly before death. Unlike the meteorism of acute peritonitis, or acute inflammatory conditions in the intestine, this form of abdominal distension may occur without obvious local cause. In some cases, however, the primary disease has been complicated by diarrhea before the distension appeared, and from the pathologist's point of view it might then be more strictly accurate to consider the distension as a complication of the secondary diarrhea or gastroenteritis, than of the original disease. Clinically, however, acute abdominal distension has the greatest practical importance as a serious complication of the original disease. For although in some cases it seems to be merely a part of the process of dying, it certainly hastens death in almost every case, and in some it appears to be the actual determining cause of death; moreover a fatal termination does not always follow the appearance of this

complication, and even if treatment fail to secure recovery it may prolong life, or at least render the last minutes or hours of the child's life more comfortable.

The condition will perhaps be described most clearly by a record of some cases which have occurred recently at the Hospital for Sick Children. For permission to make use of these cases I am indebted to the kindness of the physicians of the hospital.

Case I.—Clara M., aged sixteen months. Admitted with history of nine days' cough and feverishness, with some vomiting; bowels loose.

Pale, thin child with physical signs of extensive bronchopneumonia; abdomen normal. The lung condition became gradually worse, and temperature remained high until five days after admission, when it fell to subnormal, and the child became worse and seemed in much distress. "At 1 P. M. to-day the abdomen became almost suddenly tensely distended. The distension was general but seemed to be most marked in the region of the transverse colon, the outline of which could be seen. The ascending colon also in the right flank seemed to be greatly distended. The child was extremely restless, flinging the arms about and trying to cram the bedclothes into its mouth; lips were blue; sweating was profuse. Some evident relief was given by placing the child on its side, but injections of strychnine, passage of a soft catheter per rectum, and administration of enemata failed to relieve the distension, and the child died at 4.45 P. M."

Post Mortem.—Very extensive bronchopneumonic consolidation of both lungs, with very acute pleurisy both sides. Some turbid serum in the pericardial sac. The abdomen was unevenly distended as in life, the left hypochondrium appearing to be more distended than the right (*vide* photograph). The transverse colon was greatly distended and occupied the greater part of the abdominal cavity above the level of the umbilicus; it made a kink upwards in the left hypochondrium. The ascending colon also was much distended. The distension ceased abruptly at the splenic flexure; the descending colon and rectum were quite contracted and empty. The distension was entirely gaseous, with the exception of a small amount of semi-fluid fecal matter in the



CASE I.—ACUTE ABDOMINAL DISTENSION. DISTENSION OF COLON.
Bulging of left hypochondrium owing to great distension of transverse colon.



CASE I.

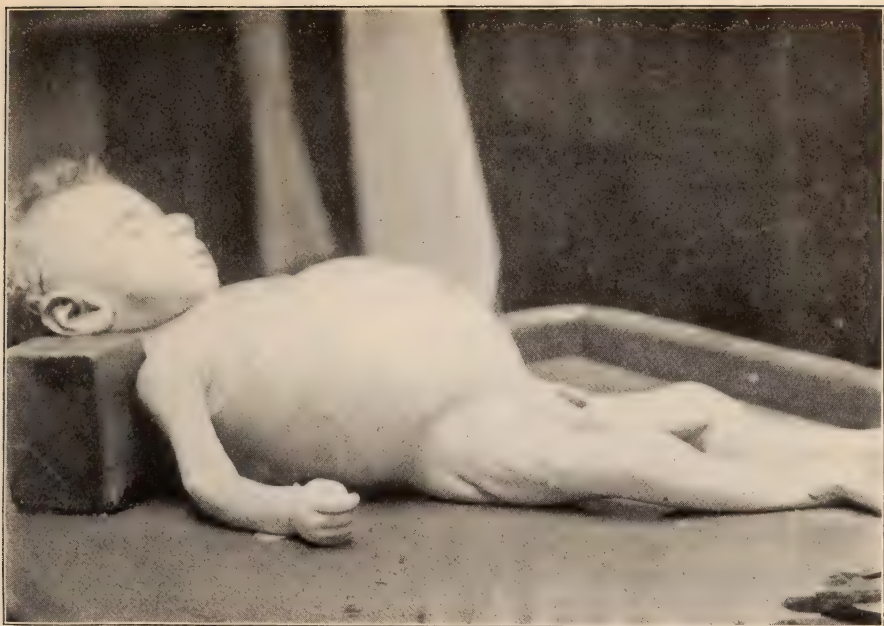
cecum. Small intestine contained some gas, but was not abnormally distended; the stomach contained curdled milk, but was not distended.

Case II.—Hayman K., aged eleven months. Admitted with history of two months' bronchitis, occasional vomiting, no diarrhea. Pale, rickety child; rapid respiration, but not distressed. Signs of bronchopneumonia, chiefly on right side. Abdomen full, but supple. Four days later the child was much worse; temperature continuously 101° – 105° , and in the evening the abdomen became greatly distended. Next morning abdomen was tense and shiny, almost balloon-like. Lips now livid, and cry feeble as if in pain. The child seemed decidedly more comfortable when lying on the side than when on the back; scarcely any relief was given by passing a long tube per rectum, or by turpentine enema. Death occurred at 6.15 P. M.

Post Mortem.—Small postpharyngeal abscess; pleural adhesions; extensive bronchopneumonic consolidation of both lungs. The abdomen was tensely and uniformly distended. The small intestines were greatly distended with gas throughout, so that they completely hid the large intestine and stomach, which were collapsed and empty.

Case III.—Edgar W., aged twelve months. Admitted with history of one month's vomiting, headache and fretfulness. Bowels costive. Feeble child, somewhat rickety; head large, but not retracted; quite blind; lungs seemed normal. Abdomen slightly full. Two days after admission convulsions began, and lasted several hours. After these ceased, patient seemed extremely ill, and about 10.30 A. M. on the third day after admission the abdomen suddenly became much distended, and death occurred half an hour later.

Post Mortem.—The usual lesions of simple posterior basal meningitis. Lungs showed some collapse, and "probably some very early commencing bronchopneumonia, but hardly definite consolidation." Abdomen greatly but unevenly distended. A marked prominence was visible on the left side of the epigastric region. The stomach was greatly distended with gas, displacing the transverse colon, and small intestine downwards. It contained about one and a half ounces of curdled milk, so that the distension was almost entirely gas-



CASE II.—ACUTE ABDOMINAL DISTENSION. DISTENSION OF SMALL INTESTINE.
Abdomen uniformly distended.



CASE II.

eous. There was a little gas in the small intestine, and the sigmoid flexure was slightly distended.

Case IV.—Victor W., aged nineteen months, suffering from splenic anemia. Had been in the hospital eight weeks, and seemed in its usual condition; bowels rather costive. About 11 P. M., however, one night, the abdomen became rapidly distended with gas, and the child died very suddenly at 4 A. M.

Post Mortem.—Stomach and colon above the sigmoid flexure were found greatly distended with gas. The heart was displaced by the abdominal distension. All other organs except the enlarged spleen seemed normal.

Case V.—Lydia C., aged two years and four months. A rickety child with bronchopneumonia following measles. On May 7 there was some diarrhea, and enormous distension of the abdomen appeared; respiration rapid, and much distress. May 9 child still extremely ill, but abdomen becoming more supple. The abdominal condition improved till May 16, when, although diarrhea had ceased, great distension again appeared. Child's condition appeared almost desperate, but from this date abdomen gradually became more supple, and resumed its normal size. The child made a complete recovery.

The above cases were all in children under three years of age, and acute abdominal distension would certainly seem to be far commoner during the first three years of life than in later childhood.

It occurs as a complication of various diseases, but particularly of bronchopneumonia. I have known it to occur in acute cerebrospinal meningitis, and in acute tuberculosis, as well as in splenic anemia and chronic simple basal meningitis.

The onset of the abdominal distension is usually very rapid and occurs generally late in the disease, when the child is becoming exhausted. It is, however, certainly not to be regarded as necessarily only a part of the process of dying, for it supervenes sometimes where there is no reason for supposing the immediate approach of death, and rarely the child may recover after the abdominal distension has appeared. In Case III it may have been only one of the phenomena of dying; but here probably, and certainly in Cases I and II, it



CASE III.—ACUTE ABDOMINAL DISTENSION. DISTENSION OF STOMACH.
Bulging of epigastrium.



CASE III.

hastened death, while in Case IV it appeared to be the actual cause of death. The possibility of recovery is seen in Case V.

The evil effects of this condition are in most cases manifestly due to the interference with the action of the diaphragm, as is shown by the rapid and labored respiration; but in some, as in Case IV, it seems likely that there is also interference with the action of the heart which may cause sudden death.

The occurrence of acute abdominal distension is therefore always of grave significance.

The morbid anatomy shows three main varieties of abdominal distension, according as (1) the stomach (2), the small intestine or (3) the large intestine is involved; either of these parts may be affected separately, as in the photographs shown, or any combination of these varieties may occur, or all three parts may be distended together. The distension is probably due in all cases chiefly to loss of tone in the gastric or intestinal walls owing to the exhausted condition of the child; but other factors are probably often present, such as catarrhal conditions of the gastrointestinal tract.

The treatment of acute abdominal distension must be prompt and vigorous, for the respiratory difficulty caused, especially when there is already serious lung disease, very rapidly exhausts a feeble infant. The first and simplest measure is to raise the child's shoulders by propping it up with pillows, and to make the child lie on its side, not on its back. In most cases distinct relief is obtained, as might be expected, when the pressure on the diaphragm is thus to some extent diminished. Hypodermic injections of strychnine and brandy, or ammonia and ether by mouth are the most useful drugs wherewith to combat the general exhaustion of the child. If there is time creosote in minim doses by the mouth may be of great use in decreasing the gaseous distension; in Case V recovery seemed to be largely due to the use of creosote. Usually, however, the child's condition is so urgent that it seems imperative to try local measures. These, however, are less useful than might be expected.

The passage of a long soft tube (a soft catheter will serve the purpose) per rectum, may bring away some of the gas, but more often it fails, and the failure is easily understood when it is seen post mortem that in most cases where the colon is distended throughout the rest of its course, the sigmoid flex-

ure, so long and tortuous in early childhood, and the rectum also, are tightly contracted and empty, while in other cases the small intestine only is involved, so that it is impossible to make a soft tube reach the distended portion. In some cases, as in Case III, it may be suspected from the localized distension that the stomach is specially affected, and under these circumstances the passage of an esophageal tube has given great relief.

Enemata of soap and water, or of turpentine, have generally proved useless, and if retained they may aggravate the distension, but they are worth a trial. Finally the question of puncturing the intestine may be raised. I have had no experience of it, but have sometimes thought that it would be justifiable as a last resource.

PHLYCTENULAR OPHTHALMIA.*

By T. C. EVANS, M.D.,
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Lecturer on Ophthalmology and Laryngology in the Kentucky School of Medicine.

THE author read a paper in which he said that phlyctenular ophthalmia, which is among the most common of eye diseases, is often divided into "phlyctenular conjunctivitis" and "phlyctenular keratitis," a classification that is superfluous and confusing, inasmuch as one frequently runs into the other, or they may exist simultaneously. Moreover the anatomical structures involved in the pathological process are so nearly identical as to offer little reason for such a division, the epithelial layer of the cornea being in fact a continuation of the conjunctiva.

Phlyctenular inflammation is most frequent in childhood and it may occur in any station in life, being more common among the poor and underfed and those who live in overcrowded quarters with unsanitary surroundings. This is especially true of children who are subjects of what we call "lymphatism," having the waxy complexion, enlargement of the

*This paper was read before the Louisville Clinical Society, and published in the *Medical News*, New York. The discussion has never appeared in print.

cervical lymphatics, adenoid growths in the naso-pharynx and hypertrophy of the faucial tonsils. It often follows the exanthematous diseases.

I cannot concur in the opinion that the colored race is more prone to phlyctenular disease than the white; the apparent preponderance is due to their environment and mode of life rather than racial proclivities. The percentage of cases occurring in the negro race is not greater than in the Caucasian who have like surroundings. In the majority of cases it is accompanied by an eczema of the face and scalp. The eczematous patches usually appear first about the alæ of the nose, at the angles of the mouth, or at the canthi of the eyelids, and may remain limited to these areas, or may extend over the face and scalp. In many cases the nose is filled with a thick, viscid mucus which the child is unable to expel. Some well-marked cases, however, occur in patients who are otherwise apparently in perfect health, and in whom it is impossible to detect any diathesis or eczematous lesion. The frequency with which it complicates, or is complicated by, eczema, has led most recent investigators to regard it as an eczema of the conjunctiva and cornea. The lesion from which the disease takes its name, the "phlyctenule" itself, consists primarily of a mass of lymphoid cells beneath the epithelial layer of the conjunctiva or cornea. In the cornea this exudation or infiltration of cells usually takes place around a terminal filament of one of the corneal nerves. The central cells in the phlyctenule undergo necrotic changes, the epithelium over its surface is destroyed, and the papule or phlyctenule is succeeded by a small, crater-like ulcer. The phlyctenule may be solitary or multiple and may develop in part of the ocular conjunctiva or cornea, but the favorite site is the junction of the conjunctiva with the cornea, the limbus of the conjunctiva. With the breaking down of the phlyctenule, and the formation of the ulcer, the action or inciting cause leading to massing of the cells appears to cease, as far as that phlyctenule is concerned. The subsequent clinical history of the resulting ulcer depends upon secondary causes. The hygienic surroundings, general nutrition of the patient, location of the ulcer, the character of the microbic infection, etc., will determine whether the ulcer will speedily heal, remain stationary or indolent, or become progressive and be complicated by an opacity or perforation.

Relapses and recurrences of the disease, which are of common occurrence, are due to the formation of fresh phlyctenules. Each phlyctenule is from two to three millimeters in diameter, and each has its own area of congestion. The nearer they approach the cornea the more serious do they become, and the more unfavorable the prognosis in regard to duration, pain and final termination. The congested vessels form a triangle with the phlyctenule at its apex and where the lesion is entirely within the conjunctiva the process subsides rapidly after the ulcer is formed, and healing is complete in from one to two weeks. When the lesion is in the cornea the healing process is preceded by the development of blood vessels from the limbus. In multiple ulcer the vascularization amounts to a true pannus which destroys the transparency of the cornea and lessens vision for the time being. After healing of the ulcer the blood vessels rapidly disappear. When the lesion is in the limbus there is a general pericorneal injection.

The subjective symptoms of the disease when confined to the conjunctiva are very slight, perhaps only an itching or burning sensation. When it affects the limbus or the cornea the pain is severe both in the eye and in the supraorbital region; but the symptom most complained of is photophobia, which is often intense, causing the child to bury its head in its mother's lap or in the bed clothing for hours and days together. The dangers from the disease are from perforation of the cornea, with prolapse of the iris; infection of the ulcer with hypopyon iritis, or irido-cyclitis; corneal opacities; facets of the cornea with irregular astigmatism.

The diagnosis is not difficult, the only thing with which it could be confounded being the small infected corneal ulcer, the result of traumatism. The ensemble of symptoms that accompany phlyctenular disease, photophobia, profuse lachrymation, blepharospasm, eczema, nasal discharge and obstruction, together with the attitude of the patient, are so characteristic that a diagnosis is often made even before the eye itself is examined. Still a thorough inspection as to the condition of the eye, number and location of the phlyctenules or ulcers, nature and extent of complications if any, is necessary for the physician's protection as well as for the intelligent management of the case. Many such cases have been neglected, and if in-

tegrity of the globe is endangered, or serious impairment of vision exists when the patient comes under observation, it is important that the fact be noted and the condition explained to the patient or parents before treatment is begun.

In adults and tractable children a satisfactory examination can usually be made after the installation of a few drops of a four per cent. solution of cocaine; but in refractory children with blepharospasm it is better to resort at once to use of chloroform rather than have a "scene," which always follows when an attempt is made to hold the child and force the lids open with retractors.

The treatment is local and general. The character and detail of local treatment will be determined by the stage, location and complications of the lesion. The first indication is to keep the eye thoroughly cleansed by frequent washing with a solution of boric acid. If the patient is old enough the eyes should be protected by smoked glasses. In complicated cases the old-time Pagenstecher's ointment of the yellow oxide of mercury still holds first place in local therapeutics, though now no one in the country uses it in the strength advised in his article on the subject, viz., 30 to 60 grains to the ounce, though European and some American surgeons still advise from 10 to 24 grains to the ounce. Children tolerate the stronger ointments better than adults. I usually prescribe one grain to the dram, or 8 grains to the ounce, which rarely causes irritation or pain. The amorphous yellow oxide and not the crystals should be used in compounding the prescription, and it should be rubbed down with a few drops of olive oil before adding it to the base. Unless the druggist is in the habit of compounding oculists' prescriptions, it is always well to specify this in ordering. The ointment should be applied inside the lids with spatula or brush once or twice a day.

Next in importance comes the installation of eserine, which may be used if necessary four to six times a day along with the ointment or other treatment. I rarely use eserine solution stronger than one-half grain, more frequently one-fourth grain, to the ounce. No one who has tried the effect of a two-grain solution in his own eye will likely prescribe it for his patients.

While atropine is recommended in most text-books, it is contraindicated except in cases complicated by perforation or

iritis. When the phlyctenules are confined to the conjunctiva, insufflation of calomel has been highly recommended. In infected and indolent ulcers, more radical measures are indicated, the actual cautery or galvano-cautery, or curettment, with application of tincture of iodine or carbolic acid to its base. For relief of the blepharospasm, dipping the child's head and face in a basin of cold water, and divulsion of the orbicular muscle with lid retractors, are the means generally advised, neither of which can well be carried out in private practice. The photophobia is partially relieved by instillation of cocaine, but the effect is transient, and constant and continued use of cocaine necessary to control photophobia retards healing of the ulcers, and it should not be used except for making an examination of the eye.

I have recently had considerable experience with sub-conjunctival injections of bichloride of mercury in infected phlyctenular ulcers of the cornea, with marked photophobia. It limits microbic invasion, hastens reparation-process and markedly lessens photophobia. In several cases the patients ceased to complain of photophobia after the first injection. The eye is first thoroughly cocainized, and with the ordinary hypodermic syringe I inject from five to fifteen minims of a one-to-three-thousand-solution. Injecting this amount of fluid into the cellular tissue will cause considerable ballooning of the conjunctiva, but the fluid is rapidly absorbed. The injection is repeated in forty-eight hours. While it is too early to speak positively, my experience thus far leads me to believe that sub-conjunctival medication has a great future. Whether the results are due to the therapeutic or antiseptic action of the mercury, or to mechanical action of the fluid in flushing the lymphatics has not been definitely determined.

General treatment has to do more with preventing a relapse or subsequent recurrence of the disease, than lesions which already exist, the constitutional treatment being more prophylactic than curative, in so far as the eye is concerned. Improvement of hygienic surroundings is of first importance, but a large proportion, in fact the majority of these unfortunates are surrounded by unsanitary conditions beyond the control of both patient and physician. The accompanying eczema should of course receive appropriate treatment. The general nutrition should be looked after; cod-liver oil, alone

or combined with iodide of iron, is indicated in many cases. The discharge from the nose, which in children constitutes a troublesome and unsightly complication, is due not to disease of the nasal cavities, but adenoid growths in the naso-pharynx, the removal of which must be accomplished by surgical means, preferably by Goettstein's curette. It is impossible to remove or reduce them by any form of medication, either local or general, and to treat them expectantly is to subject the patient not only to the dangers of recurring attacks of phlyctenular inflammation, but to the whole catalogue of complications that follow these hypertrophies. The faucial tonsils are also often hypertrophied in patients affected with phlyctenular disease, the removal of which will add much to their comfort, though the danger from this complication is not nearly so great as in case of the pharyngeal tonsil.

DISCUSSION.

DR. WILLIAM CHEATHAM: If there is any one disease of the eye which depends upon bad hygiene it is the disease upon which Dr. Evans has read his paper. We speak of trachoma being a disease resulting from bad hygiene, a disease dependent upon filth, but I believe of the two phlyctenular disease of the eye depends more upon bad hygiene and filth than does trachoma. Trachoma is unusual in the colored race whose hygienic surroundings are ordinarily of the most unfavorable character, while phlyctenular troubles form about four per cent. of inflammations of the eye in colored children. It gives about six per cent. of the inmates of the blind asylums.

I agree with everything Dr. Evans has said concerning the etiology and pathology of the affection, etc., until he gets to the treatment. I cannot understand why he advises the instillation of eserine into the eye in these cases, unless it is to decrease the photophobia. The photophobia is a result of inflammation of the cornea and I cannot see how eserine can reduce it. The first indication in this disease is to keep the eye open. If the eye is kept closed the secretions are retained and you are much more liable to have secondary infection, supuration of the cornea, etc., etc. My experience with eserine is that it increases the photophobia and is liable to produce iritis. Eserine may be indicated in some of these cases, where you have a peripheral phlyctenular ulcer of the cornea and want to

contract the pupil, in case the ulcer should perforate or if there is much increase of tension. In other cases it has been my practice to use atropine. I have found cocaine of very little service compared with cold water. The effect of cold water is marvelous in these cases. I remember having had two illustrative cases of phlyctenular ophthalmia recently and will detail them briefly: In one of the cases the child had not had its eyes open for six months; the mother came into my office leading the child and made the statement that she thought it was blind. I took a basin of cold water and dipped the child's face in it a few times, and as a result it walked out of the office with both eyes open, and under appropriate treatment made a perfect recovery. It never had any trouble with the eyes afterwards.

Some time ago a countryman came to consult me carrying a child with his face buried under his clothing on his shoulder. I could not make the child hold its eyes open at all. The man was a very sensible individual and let me have full charge of the case. I dipped the little one's face in a basin of water twice and it came up just as obstinate as ever; I dipped it again, and the third time it came up with both eyes open. It made a prompt recovery.

Nothing acts as well as cold water in these cases. I used chloroform before cocaine came into use, each day getting the eye further open, in this way getting it used to the light. The first thing to consider in the treatment of this affection is improvement in the hygienic surroundings. The late Dr. Agnew, when in charge of the Manhattan Hospital, New York, is authority for the statement that if parents will feed these children properly they will get well. I remember one case some years ago that resisted all forms of treatment. The child was three years old, and was fed entirely upon milk. This was stopped, and the child put upon the table food, avoiding sweets, tea and coffee, and soon recovered. When it comes to internal medication or feeding, I would rather do without the internal medication and give proper food. These children are usually very cross and irritable, crying nearly all the time, and to pacify them parents are in the habit of giving them cakes and candies, just the things they ought not to have. I do not rely much upon constitutional or local treatment, outside of atropia, depending largely upon the use of cold water, improvement in hygienic surroundings and proper food.

Dr. S. G. DABNEY: The subject of phlyctenular ophthalmia is always interesting. It is rather singular that the disease is misnamed. The word phlyctenular is derived from the Greek word which signifies blister, because the elevations were formerly thought to contain fluid. We now know this to be untrue. I agree with Dr. Cheatham that the disease is largely dependent upon the diet. In fact I would put diet ahead of sanitary surroundings or any other causative factor. I have come to the conclusion that instead of being a filth disease it is a disease dependent upon improper food in a very large measure. Whether the disease involves the cornea or the conjunctiva is of no great importance, as regards etiology; when the disease attacks the conjunctiva only it is a very simple affair, but when it affects the cornea we are liable to leave a permanent opacity.

I remember a case of this kind some years ago where perforation occurred as a result of a phlyctenular ulcer of the cornea. The patient was a negro boy fourteen years of age. This phlyctenular ulcer had perforated the cornea, as sharply as if you had taken awl and penetrated the chamber. The perforation had probably existed a day or two at the time I saw the boy, and the iris was caught in it, but the use of eserine freed it and made the pupil regular.

As to treatment: I have never had occasion to use chloroform in the examination of these cases. I use cocaine and cold water. I think cocaine has no value as a therapeutic agent, but is a valuable means of diagnosis and examination. Calomel has a place in my judgment, especially when the phlyctenular process affects the conjunctiva of the sclerotic; calomel seems to have better effect than the yellow oxide of mercury. Like Dr. Evans I seldom use the yellow oxide stronger than half to one grain to the dram applied once per day. Local treatment by the use of atropine and eserine is also of interest. I think we must determine the agent to be used by the situation of the disease very largely, whether there is an ulcer or not. Sometimes there are very slight phlyctenules—they are called miliary in the books—that exist as a little ring just around the cornea, requiring quite a scrutinizing examination to see them. The child presents an extreme sensitiveness to light and a watery condition of the eyes, and at first sight you can hardly notice the phlyctenules at all. In

the treatment of such a case eserine has proven by far the most valuable agent in my experience. Atropine aggravates the condition. Another indication for the use of eserine is where there is an ulcer somewhere near the margin of the cornea, where you would expect or fear perforation and prolapse of the iris into it. Barring these two instances my judgment is that atropine is more useful in dealing with inflammation of the cornea. Where the inflammation is confined to the conjunctiva outside of the cornea, we should not use eserine. Except in the miliary form and where corneal perforation is threatened, I use atropine in four grains to the ounce solution. An important thing is to protect the eyes from the light, keep them open, and get the child out of doors. This is a mistake that parents generally make; if one of their children has anything the matter with its eyes, they keep it in a darkened room. Most of those cases, especially in the adult, where the patient claimed to have been blind for six months and recovered, have simply kept the eyes closed for that length of time on account of photophobia. This is the probable explanation of it. In the treatment of these cases very much, in my judgment, depends upon the diet. The avoidance of all sweets, pastries, candies, coffee and tea, is very important. A wholesome diet should be enjoined, fresh milk, meat, vegetables, ripe fruit, etc. It is also advisable to order salt baths at intervals. The eyes should be protected by a shade or smoked glasses; build the patients up with tonics, cod liver oil, syrup of the iodide of iron, etc., and keep them in the open air.

Dr. J. M. RAY: The gentlemen who have spoken have outlined the generally recognized and approved treatment for the class of cases under discussion, and I can fully agree with what has been said concerning the general treatment of this class of eye cases. There are a few points, however, in the paper to which I desire to call attention. Dr. Evans makes the statement that he does not think phlyctenular ophthalmia, or as we so often call it, strumous or scrofulous ophthalmia, is more common in the colored race than in the white. I do not see how anybody could run a dispensary clinic in Louisville without being profoundly impressed with the prevalence of strumous or scrofulous ophthalmia in the negro. I know that of the eye cases that present themselves at the University

clinic among the colored race, roughly speaking, fully one-half are suffering from the presence of active inflammation, the result of the so-called phlyctenular disease or its sequelæ—corneal ulcers with perforations, or corneal scars that mark the site of former ulcers.

Another thing that has impressed me in a clinical way is the much more frequent occurrence of phlyctenular disease in the colored adult as compared with the white. We do not find phlyctenular disease very often in the white adult, but in the negro adult it is quite prevalent. A point which I think emphasizes this statement is that we all recognize that the negro is essentially a strumous or scrofulous subject. This being true we must admit that the strumous or scrofulous forms of eye inflammation are more common in the negro. Further evidence of the prevalence of phlyctenular disease in the negro, can be demonstrated to any one interested in eye diseases by a visit to the Kentucky Institution for the Blind. The number of colored children that have become blind from this cause is very large. With the assistance of Dr. W. O. Bailey, who is present to-night, I have made a thorough investigation on this subject, visiting the Institution for several years, and have some figures showing the percentage in each race, which I hope he will present. My recollection is that in the colored race it far exceeds any other form of eye disease. In the white race certain other eye diseases are more prevalent.

At the last meeting of the Kentucky State Medical Society I read a paper based upon a series of cases of eye diseases that Dr. Joyes collected for me; he took the books of our clinic and tabulated the last one thousand consecutive cases of eye disease, and I made a report based upon this information to show the prevalence of the various forms of eye inflammation in the negro race. The result was that I found phlyctenular disease far more prevalent in the negro race than any other form of eye disease. On the other hand, in the white race it was found there were several forms of disease that outnumbered the phlyctenular cases. So much for the etiology of the disease.

With reference to the best treatment: We all recognize the so-called classical treatment, yellow oxide of mercury, regulation of diet, mode of living, tonics, cod liver oil, iron,

exercise, etc. I think the majority recognize the indications and contraindications for myotics or mydriatics. It depends very much upon the lesion and its seat. I am convinced I have seen a number of cases in which the lesions were situated around the periphery in which atropine gave the most relief. Atropine has an influence over the eye as a sedative that cannot be obtained by any other drug. I have seen a number of cases with intense photophobia, where the inflammation of atropine relieved it completely. I have also seen cases of this variety of eye inflammation in which there was most positive and persistent photophobia, where the inflammation was very superficial, careful inspection showing that there was no possible danger of the ulcer penetrating the cornea, yet there had been for weeks and months the most intense fear of light. I have tried all kinds of medication with these cases, dropping cold water into the eye, dipping the face in cold water, etc., and am thoroughly convinced that the best treatment is to force the eye open and drop on the exposed part a few drops of cold water. I have also seen cases that were not relieved by this treatment. I recall in the last few years two cases of intense photophobia in this form of eye disease, in which I was forced to place the child in the infirmary, give chloroform daily for as much as a week, and force the eye open, allowing it to be exposed to the light, so that the conjunctival epithelium that had become macerated and sodden could dry, and in this way relieve the photophobia. I have never yet seen a case in which this treatment would not relieve the distressing symptoms.

As to internal treatment: I agree that the internal administration of iron, cod liver oil, alteratives, tonics, regulation of diet, etc., are of first importance. I think that the internal administration of calomel has a place in this class of cases. We know that calomel relieves the engorgement of the lymphatic system, hastens absorption, etc.; and I have found, especially in children, that the internal administration of small doses of calomel has been of great service in the treatment of phlyctenular eye disease. One-quarter to one-tenth grain of calomel three or four times a day in connection with the syrup of the iodide of iron or some preparation of cod liver oil may be given with benefit. I think also that a few of these cases may be advantageously treated by the local use of the

yellow oxide of mercury ointment, but I have found a good substitute in calomel ointment, two to four grains of calomel to the dram rubbed up with vaseline, which answers the purpose quite as well as the yellow oxide. The internal use of calomel not only aids the recovery but seems, more than any other drug, to guard against relapses, that are often so annoying and difficult to manage.

Dr. W. O. BAILEY: All I have to add to the very complete discussion is to give the percentage of cases that we found in the Institute for the Blind from phlyctenular keratitis: Of 155 white inmates examined only 13 were blind or vision very much impaired, the result of phlyctenular keratitis, $8\frac{1}{3}$ per cent. In the colored ward we examined 36 cases, 12 of which were blind from phlyctenular keratitis, or $33\frac{1}{3}$ per cent. Exactly four times as many in the colored as in the white ward.

Dr. A. O. PFINGST: I am glad that Dr. Ray mentioned the internal use of calomel in the treatment of phlyctenular ophthalmia. Before I went to New York I never heard of this method of treatment, and thought it originated with Dr. Born, who claims to have had better results from the internal administration of calomel as far as the lesions were concerned, than from any other form of treatment. He employs this treatment almost exclusively. As to the yellow oxide of mercury ointment: It was formerly used in very much greater strength than at the present time. I have not known of its being employed recently in strength greater than two per cent.—one to two per cent. is the rule.

Dr. T. P. SATTERWHITE: The treatment of phlyctenular ophthalmia was about the same twenty-five years ago as it is now. I remember taking a case to Dr. Williams, of Cincinnati, to be treated. He used atropine, sprinkled calomel in the eye, and for the photophobia he gave quinine, which in that case had a favorable result.

MENINGITIS.*

By W. C. COLE, M.D.,

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CEREBRAL Meningitis, while it is not a very common disorder, is sufficiently often met with to make it necessary for every physician to be able to recognize it at the earliest possible moment.

In order that we may have a clear comprehension of the term meningitis, let us consider the parts involved. *Meningium*-membrane, *itis*-inflammation, hence applied to the membranes of the brain. Meningitis signifies an inflammation either of the outer membrane—periosteum lining the inner surface of the skull—known as the dura mater, or of the membrane enveloping the brain itself, known as the pia mater.

The dura mater, or membrane lining the inner aspect of the skull, is comparatively thick, dense, and fibrous; is closely adherent to the bone throughout; its inner surface is smooth and lined by the outer or parietal layer of the arachnoid. Its outer layer sends numerous processes into the cavity of the skull for the support and protection of the different parts of the brain, and is prolonged to the outer surface of the skull, through the various foramina which exist at the base, and this becomes continuous with the pericranium; its fibrous layer forms sheaths for the nerves which pass through these apertures. (Gray.)

This is important to remember, for it is through these channels that inflammation not infrequently travels up into the dura mater proper and thence to the brain. The arachnoid, formerly described as a separate and distinct membrane and subject to an inflammation of its own, is now considered as simply the lining of the other two membranes, dura mater and pia mater, and the term arachnoiditis that we heard so much about a few years ago, is not to be found in the writings of recent authors. Although arachnoiditis was considered too much of a refinement, some recent writers describe an external and internal pachymeningitis, or an inflammation of the outer, and an inflammation of the inner surface of the dura mater, which to the common mind seems as much of a refinement as the old term arachnoiditis and does not add to our

* Read before the Morgan County Medical Society, 1897.

enlightenment. However, we will not dwell on these irrelevant terms, but pass to what is commonly understood as inflammation of the pia mater. The pia mater is a vascular membrane. It consists of a minute plexus of blood vessels, held together by *extremely fine areolar tissue*. It invests the entire surface of the brain, dipping down between the convolutions and laminæ, and is prolonged into the interior. Now, when we consider the extreme delicacy and thinness of these membranes, that a beam of light would penetrate a dozen or more of them held together, and when we consider how intimately they are connected with each other and with the brain itself, we can begin to appreciate the difficulties of making an early diagnosis, and especially a differential diagnosis of the inflammations in these several membranes.

Thos. Latimer, of Baltimore, says: "By simple meningitis, leptomeningitis, or purulent meningitis, is usually meant inflammation of the arachnoid and pia mater. Writers distinguish an arachnoiditis, but as this probably never occurs apart from inflammation of the pia mater or dura mater it may be considered as unnecessary refinement. Also that all forms of meningitis have much in common, and as a description of any one form is in great part a description of all, it is therefore expedient to avoid needless repetition."

The first step in inflammation here, as elsewhere, is congestion; as a result of congestion we have stasis; then follow the many phenomena produced by compression. The symptoms are not fixed or uniform; they generally begin with rigors, vomiting, headache, loss of appetite, etc. The headache is so prominent and constant a symptom that the late Dr. Flint, in his work on practice, was led to divide the disease into three stages, to wit: That of headache, of delirium, and of coma. With the headache there is very apt to be tenderness to the touch of some portion of the head; this may be confined to a circumscribed area or be diffused over most of the head. The area of tenderness does not always correspond to the site of the inflammation, since it has been found that the inflammation may be in the opposite or some other portion of the brain than immediately beneath the tender spot.

Perhaps I can do no better in this connection than recite two cases, which represent two extremes in symptomatology, that came under my observation within the last year.

Case 1. Female child, eight months old, was taken July 8th, 1896, with slight diarrhea and occasional vomiting. On the 10th it was reported as being much improved; on the morning of the 12th, at 2 A. M., it was taken with severe convulsions. I arrived at the bedside of patient a few minutes after; found her in a paroxysm of pain and the face cyanotic. Seemingly there was no breathing, head was hot, body hot and rigid, eyes drawn upward and to one side. It was only through the combined use of hot baths, cold to head, and chloroform inhalations that we were enabled to quiet the convulsions. At the end of four hours we succeeded in getting the patient to swallow some chloral and bromide of potassium. Two and a half hours later we found she had had two light convulsions, and the head was hot in spite of the cold wet cloths. The child had not regained consciousness since the first convulsion, and the temperature at this time was $107\frac{1}{2}^{\circ}$ F. in axilla. At the end of four days temperature came down to $97\frac{1}{2}^{\circ}$, though almost immediately rose to 101° and fluctuated between that point and normal for another week, during all of which time, fourteen days, the child lay in a semi-comatose condition, with complete loss of motion, for the greater part of the time, of both limbs of the right side; the face was expressionless, and the eyes staring or the eyeballs oscillating, with irregularly dilated or contracted pupils. For several days the sclerotic was insensible to the touch.

This case presented all the symptoms of a well-marked meningitis in an aggravated form, and seemed would surely lead to a fatal result, but it ultimately recovered.

Case 2. On April 28, present year, I was called to see female child, aged 5 years. She had whooping-cough for three weeks, and the paroxysms of coughing were said by the mother to be very severe. The child had not been sleeping well for several nights, was restless and thirsty. When I saw her she complained of headache and feeling bad generally, but could not be persuaded to go to bed. She had some fever, a coated tongue, loss of appetite, etc. I did not see her again for four days, during which time she was up and about the house with the other children. At the end of four days, however, I was sent for and found her with a temperature of 102° , pulse below normal, and severe headache; in fact, headache (frontal) was all that she complained of. The temperature

continued at 102° only a few hours and came down to 100°, and ranged from 98½ to 101½ for the next three weeks; the pulse during the same time fluctuated between 68 and 128. Only once or twice during the first two weeks did the pulse go as high as 100.

This child, seemingly not very sick during the first ten days of its illness, gradually progressed downward and died on the twenty-first day after my first visit.

These cases illustrate the lack of uniformity of symptoms in this disease; it is only by considering the symptoms as a whole that we arrive at a satisfactory diagnosis. Of course, after the disease has been in progress four or five days, the diagnosis is plain enough, but if the case happens to be one amenable to treatment by surgery or otherwise, the four or five days lost are all too apt to be fatal days.

The information furnished by microscopical examination of the blood, as set forth by Barker and Flexner, of Baltimore, is calculated to shed much light on this subject, especially on the operable cases, those occurring from extension of an inflammatory process from a middle ear or mastoid disease, inflammation of the eyeball, the diseased process traveling up the sheath of the optic nerve, from erysipelas, etc.

I use the term operable without authority, perhaps, but on the general principle of a well-established rule in surgery, that where there is pus it must be evacuated. I feel that the term is justifiable, and with our increasing knowledge before long an operation through the skull for meningitis will be not only justifiable but required by the surgeon who hopes to keep in the front rank of his profession.

Since writing the above I read in the American Text-Book on diseases of children, Starr, as follows: "It has happened to the writer to witness two cases of supposed lepto-meningitis in adults, with fatal termination, supervening on chronic suppurative states that had followed scarlatina many years before. Had the aural trouble been effectually treated the meningeal inflammation would in all probability have been averted. Doubtless many cases have existed, etc."

The latest we have on microscopical examination of the blood is that "Leucocytosis is usually well marked in meningitis. Von Limbeck considers that *tubercular* meningitis can be distinguished from *purulent* by the absence of leucocytosis

in tubercular cases, but Osler states that many cases of tubercular meningitis *do* have leucocytosis through their course, and my own observations in a few cases tend to confirm this. It seems, therefore, that we sometimes have here an exception to the general rule that tubercular processes do not produce leucocytosis. Certainly some cases do follow this general rule, but however this may be, it is certain that purulent meningitis, whether secondary or of unknown origin, is characterized by high leucocyte counts, and if in a case evidently of meningitis, of some kind, leucocytosis is absent, the case is probably tubercular in origin" (Cabot).

Meningitis is the only intracranial disease (except abscess and apoplexy) which shows leucocytosis, and this fact may be of great help in excluding other causes of coma. Brain tumor, hysteria, lead encephalopathy, diabetic coma, sunstroke, and narcotic or alcoholic intoxication do not cause leucocytosis, and hence can be excluded by its presence. Uremia and post-epileptic coma may have leucocytosis and cannot be distinguished from meningitis when leucocytosis is present, but the absence of leucocytosis excludes meningitis. Some cases of typhoid, when seen for the first time and without a history of previous illness, may be difficult to distinguish from meningitis; but typhoid never has leucocytosis if uncomplicated, and meningitis always has.

As to the etiology, in the great majority of cases no cause can be found. Recent research in bacteriology has not been able to fix on any germ or germs as being the exciting cause, while it is true that some species of micro-organisms are found in all post mortems, microscopists are not agreed as to any *one* species being the causative agent. I am inclined to the belief that most of our idiopathic cases here in rural practice come on from middle ear trouble—trouble that was considered at the time a trivial matter and possibly had been recovered from. Such, I think, was the condition in one of the cases mentioned above, the case that proved fatal; the child having had scarlet fever three years before with a resultant otorrhea, from which she had apparently recovered.

The text-books enumerate many cases, though some of them seem far-fetched and are too often rough guesses when nothing more than a guess can be reached. I put stress on this one cause—middle ear disease—because I am satisfied it

is too often overlooked. An ear that has once suppurated, although apparently healed, perhaps for months, is a good nidus for germs and should arouse our suspicion whenever head symptoms manifest themselves.

In the management of this formidable disease, the indications are to keep the patient in as quiet and comfortable a position as possible; relieve the head symptoms as far as can be, control the nervous irritability; in short, relieve symptoms by the best means at our command, and we have then done all that our science demands of us at the present time.

But it is the different means employed and the manner of employing them that constitutes our practice.

In no disease, perhaps, are the indications for remedial treatment more clearly pointed out by symptoms, and yet no disease is perhaps less amenable to medication than this. To control restlessness and quiet nervous irritability, the patient must be in a quiet, cool, well-ventilated and moderately-darkened room. The head should be kept cool by means of ice, having the hair cut close. Counter-irritation to back of head and neck—perhaps mustard draft short of blistering, frequently repeated, is as good as any.

Chloral, the bromides, or even morphia, may be required to aid the means already mentioned, to secure *relief*. If there is any suspicion that the case originates from traumatism, erysipelas, or middle ear trouble, the trephine should be used, the parts thoroughly cleansed and antiseptically dressed. Active catharsis must be secured in the early stage, and a moderately active condition of bowels should be kept up for some days. Iodide of potassium, for its supposed resolvent action, is indicated and should be given. On the theory of constricting the blood vessels in the brain and thus strangling the inflammatory process is ergot recommended—and it is one of the few remedies from which good results may be expected. Though the remedy that fulfils more indications perhaps than any other is gelsemium. I have been using it in all manner of spasmodic and neuralgic affections for the last eighteen years; in this disease I have thought it relieved the head symptoms, the nervous irritability, fever, etc., better than any other agent. Recently I was in the Southern part of the State, and there met Dr. J. J. Troutt, of Nashville, Ill., who told me that he had come to rely almost entirely on gelsemium

in the treatment of meningitis and cerebro-spinal meningitis; that he had passed through two or three epidemics of the latter disease and had found nothing equal to gelsemium in the treatment of these cases.

While I have long been enthusiastic in the use of gelsemium I am satisfied, after talking with Dr. Troutt, that the remedy is capable of exerting more good than I have succeeded in getting out of it. The doctor's method is to commence with good-sized doses, say two drops of the fluid extract every two hours for a child five years old, and pushing it to its physiological effect. Then keep the patient steadily and continuously under its influence until the disease gives way. This would seem to be the only rational way to use it, but the remedy being a powerful one and capable of producing powerful results, we are apt to hesitate and stop short of the goal, mainly, I imagine, from the fact that we haven't the precedent or sanction of the text writers, for, strange to say, we fail to find it even mentioned in the list of remedies in any of the works on practice for the treatment of this disease, save the one exception of Bartholow, who says, "if there be much cerebral excitement, good results may be obtained from the fluid extract of gelsemium, which may be added to the other remedies, 1 minim every two hours." One minim for an adult every two hours would seem altogether too small a dose to expect any results in so active and grave a trouble as this.

The United State Dispensatory, fifteenth edition, says: "Its use should be chiefly restricted to spasmodic and neuralgic afflictions." Though nowhere in Flint, in Pepper's voluminous works, in Starr, or, in fact, in any of the works on practice that we have had access to, is it even mentioned in the treatment of this disease. I would urge you to give this remedy a thorough test, pushing it till physiological effects are secured, and, I am sure, you will be surprised and pleased with the result.



EDITORIAL COMMENTS.

**John Hunter and the
First Account in
England of In-
tussusception.**

The *British Medical Journal* says that the clinical records upon which John Hunter founded one of the most fruitful of his many papers—that on intussusception, has lately been brought to light. Lord Dartmouth gave him several papers referring to illness of various members of his family, and among these is one headed “A copy of the account of the dissection of the body of the Hon. Mr. Howard, aged nine months and a day. This is dated June, 1789, and the clinical details of the case are as follows: Dr. Ash, who was in attendance, says “that the child was suddenly taken ill with a strong convulsive spasm; that immediately after the spasm it passed a large, copious and natural stool of a liquid form, and that on attentively considering the whole abdomen I felt, or thought I felt, under the lower ribs on the left side some enlarged substance not very hard to feel. The child was otherwise in full health and habit, with a placid countenance, smiling almost in the arms of death. Every kind of purgative was given by the mouth. Sixteen enemata were administered of every kind from plain saline clysters to more stimulating ones. Tobacco in infusion and in fume, as well as others with fetids and assafetida, but all without effect. It never had any other stool during the sixty hours it continued in life.” The specimen, with Dr. Ash’s notes, and Homes’ account of the post-mortem came into John Hunter’s hands. He worked it up into a paper which he read in 1789 at the Society for the Improvement of Medical Knowledge at Slaughters’ Coffee House in St. Martin’s Lane. His description became classical and the specimen is one of the most valued possessions of the Hunterian Museum.

Apparatus for Collecting the Urine of Infants.

Any one who has had experience in the treatment of infants is well aware of the difficulty met with in collecting their urine, so that an apparatus which promises to solve this difficulty will be hailed with gratitude both by doctor and nurse. M. Marfan, of Paris, claims to have invented a simple but satisfactory apparatus of this description, and describes it in the *Journal de Clin. et Therap. Inf.*). He says: In addition to the fact that the micturition of infants is involuntary, fecal matter is nearly always present in the urine. With the exception of the use of the catheter, which is too inconvenient, I have tried with no satisfactory results every conceivable plan to overcome the obstacles, and have finally invented an apparatus myself. For the male infant I use a pear-shaped india-rubber bag with an orifice in its posterior part, into which the penis and scrotum are introduced. This is fixed in position by an abdominal belt. At its lower end is a metal tap through which the collected urine can be drawn off. For female babies a kind of funnel flattened laterally is fixed round the vulva, leaving the arms outside. It has also a tap which is straight when closed, and is thus not interfered with by the pressure of the thighs of the infant.

The Healthfulness of Crying for Infants.

A "good cry" is an expression often made use of, and at first sight it seems decidedly misapplied, but upon a little consideration it will be allowed that after all in many instances it is not an inappropriate term. Of course crying is usually associated in one's mind with grief or pain, although even when such is the case crying is a relief and thus does good. There are many occasions, however, when crying, and violent crying, is of the most decided benefit to children. In reference to this the *Hospital* says: "In children a great change takes place during crying in the manner in which the respiration is carried on. Expirations are prolonged sometimes for as much as half a

minute, and are interrupted by short inspirations. During expiration the glottis is contracted so that intrapulmonary pressure rises considerably, and there can be but little doubt that it is the equal distribution of this increased air pressure throughout the whole of the chest leading to dilatation of portions of the lung that have become more or less collapsed, that is the explanation of the great benefit which often results from crying, in cases of infantile bronchitis, and of the large discharge of bronchial mucus which so often follows. Children may become very blue during the paroxysm, but the deep respirations, which succeed quickly, restore the circulation to a better condition than before in consequence of the large lung space available. It might be added, that in cases of empyema, too, when pus has collected, that if a child when being operated on cries, it is a great help towards getting rid of the purulent matter.

Intubation in the Treatment of Diphtheria in Children.

A very interesting book, or rather a series of papers collected during recent years by Dr. Nestor Tirard, at the Evelina Hospital for Children in London, and put together into book form, has just been issued. Dr. Tirard urges that in cases of diphtheria, where antitoxin has been used and where surgical interference is necessary, that intubation should be resorted to rather than tracheotomy. As Dr. Tirard has had very considerable experience his words should carry much weight. In the Evelina Hospital tracheotomy is now rarely performed, the results from intubation having of late proved by far more satisfactory. That throughout Great Britain intubation has fallen greatly into disuse is more due to the fact that hands manipulating the intubator have been unskilful than the operation has been shown to be inferior to tracheotomy. It should be remembered, too, that in England conservative prejudices are apt to linger for a long time, and that until a fresh mode of treatment has been proved beyond the shadow of a doubt to be superior to an existing one, that this new method will be

regarded with more or less distrust. Dr. Tirard's decision in favor of intubation is therefore the more gratifying.

**Treatment for Insect
Bites.**

Children, without doubt, suffer more severely from the effect of the bites of insects than adults, and it is comforting at all times to read of any description of treatment that may give relief. Still the truth must be confessed that many of the advertised remedies do not act up to expectation, their curative or soothing qualities are grossly exaggerated, so that when one hears on really reliable authority of an efficient anti-inflammatory, one feels tempted, even in the face of former unlucky experiences, to give it a trial. Such a panacea for insect bites is said to be found in ichthyol. W. Ottinger says of ichthyol, in *Münchener Med. Wochenschrift*, 1896: "In the case of bites of flies, bees, wasps, etc., the application of ichthyol quickly causes the inflammatory phenomena to abate, and in a few minutes all feeling of pain, burning, and itching ceases. It is best applied pure, a thick layer being laid on with a brush." During this present summer the mosquito plague, as well as that of other insects, has been, owing to the excess of moisture, exceptionally troublesome, while to children in parts of the country it has been most dangerous.

**Education and
Hysteria.**

At the Congress of French-speaking alienists lately held in Toulouse, one of the subjects dwelt upon was education in reference to hysteria of childhood. Where there is so much discussion and difference of opinion as to the causation of the malady, it is instructive to have the opinion of a French expert on the point, as through the labors of their school hysteria has been accorded the recognition it deserves. Dr. Augustus Eshner inclines to the belief that hysteria depends essentially upon metabolic or nutritional changes in the cellular elements of the central nervous system. Dr. Pitres, one of the most

noted writers on the subject, speaking at the French Congress, states his opinion thus: "People are born hysterical, and do not become so. Where there is this hereditary constitution three principal factors may provoke the manifestations of hysteria; these are 'education,' 'emotion,' and 'contagion.' Education is a frequent factor. Nervous children instead of being sent to bed early and kept free from excitement during the day, are by some parents obliged to work too much or are excited by being taken to pay visits, or by being allowed to play at noisy games. Sometimes they are taken to the theater, or made to play little parts in private theatricals. Telling moving or terrifying stories is a faulty form of education, and especially instrumental in provoking hysterical manifestations in children thus constituted." M. Baralart has published a history of six children in one Brittany family who became hysterical after having been told stories of ghosts and witches.

**The Nomenclature
of Diseases of
Children.**

From time to time reform has been attempted in the nomenclature of diseases, with the object of improving on or doing away with the bad Latin and Greek terms now abounding. There are many who wish for new terms as well as a proper understanding of the old words. The nomenclature of some of the diseases of children might be revised with advantage, at least if not revised there should be agreement between English-speaking doctors in respect to the expressions used when referring to these diseases. For instance, when speaking of the dyspeptic conditions of children, it is the custom with a large number of physicians to invariably make use of the general term catarrh; this may be anatomically correct, but after all it renders the disease somewhat obscure to readers. Several diseases are known by names which do not seem in the least fitting, while others appear to exactly express the nature of the complaint. What could be more expressive than the names scarlet fever, croup, whooping-cough, bronchitis? Discussion

is useless over words which have been accepted and by years of use become thoroughly grafted upon the language. In a few words it may be said, that names which are most in sympathy with the genius and structure of our language, or are actually drawn from our speech, are most suitable for adoption by us. As a great authority on the subject says: "All disease names are only labels by means of which the maladies themselves can be identified, discriminated and classified, and those names are the best which are simple, distinctive, and express no theories of causation. It is the folk names which most often meet these requirements, and therefore deserve the widest adoption by us in the future."

The Evil Effects of too much Education with the Young. Complaints are at times made in this country that the health, and particularly the eyesight of children, is permanently injured by a too close application to the desk. However, the lot of children at school here is a light and easy one, when compared to that of their juvenile fellow-students in Germany. There, indeed, if report does not speak falsely, the brain work that quite a young child is expected to get through in a day is sufficient to cause much alarm. In Germany many subjects are taught in the schools which in other countries are included in the University course. German parents are now awakening to the dangers of this cramming system, and are becoming day by day more nervous as to the ultimate result on the physique and stamina of the rising generation. Professor Eulenburg some time ago, in the *Deutsche Medicinische Wochenschrift*, criticises the hours of work of a celebrated Berlin "gymnasium," where the sixth class has in the week thirty-three lessons. Dr. Eulenburg points out that according to Griesbach the brain of an overtaxed child requires several hours of rest before regaining its normal faculties; and Burgerstein says that boys of twelve years of age require as a rule an interval of several minutes after forty minutes devoted to study. Although there is no country in the world where the

young are subjected to such brain pressure in the schools as Germany, yet the trend of modern education, both here and in England, points the same way. The worst feature of the case is that young children are not only compelled to learn an enormous quantity of subjects, but also so many useless ones. Elementary schools should teach nothing but elementary subjects. It certainly seems that the results of modern education are in no way commensurate with the trouble and expense incurred.

"Les Enfants Assistés de la Seine" in Paris. Charity is one of the most predominant features of the end of 1800, sometimes indiscriminate and promiscuous, doing perhaps as much harm as good, nevertheless the wish and the will to relieve suffering is present, and certainly should not be discouraged. A Frenchman's love of children is almost his most distinctive characteristic, and he does not mind how much money he lavishes in adopting new ideas to insure home life to those who lack it. The French were first in the field with institutions on a large scale for the care of the homeless young, although they have been passed by the Americans and English so far as practical management is concerned. The institution of "Les Enfants Assistés de la Seine" is the oldest establishment of its kind in France, dating back to the time of St. Vincent. It was founded for the relief of waifs and strays. The hospice in which the lost and abandoned are received is an immense building, containing everything necessary in a place of the kind. It accommodates about 500 children. The total expenses in 1896 were 10,388,247 francs, the receipts were 4,838,463 francs; the difference is made up by the State representing a charge of 130 francs a head. The children are kept at the hospice till the age of six, and then boarded out. At the age of thirteen the children are apprenticed to some trade. There is plenty of scope for charity among children in France, as according to statistics in 1893 there were about 14,000 orphans, and no less than 79,000 foundlings.

SOCIETY REPORT.

PHILADELPHIA PEDIATRIC SOCIETY.

June 8, 1897.

Congenital Malformation of the Rectum with Report of a Curious Case.—Dr. E. R. KIRBY read a paper with the above title. The rectum and its terminal apparatus, the anus, like other portions of the human anatomy, are liable to malformations and imperfections, the result of some extraordinary derangement of the acts of the plastic energies at some period during the evolution of the embryo.

Some of these vices of conformation are by no means uncommon; many of them are remediable, and as they generally admit of no delay in their treatment, a knowledge of all the medical and surgical measures which experience has decided to be best adapted to remedy each particular deformity, is of the utmost importance to every physician and accoucher.

No obstetrician should ever neglect the important duty of examining minutely every infant immediately after birth and for a day or two subsequently, to ascertain without a doubt, the presence of an anal aperture, that the canal for some distance above is pervious, and that the parts perform their normal function.

As to the frequency, Collins found one case in 16,645 children born in the Rotunda at Dublin, and Lohrer of Vienna two cases in 50,000.

The mortuary statistics of the city of Brooklyn from 1891 to 1895 show that during that time twenty-five children died within a few days after birth from complete congenital imperforation of rectum or anus. During this same period there were 90,180 births recorded, but it is the opinion of the registrar that not more than half of the actual births are recorded. Accepting his estimate as correct, the proportion of cases would be one to every 7,200 births.

Notwithstanding these statements, I am of the opinion that these malformations are of much more frequent occurrence than is generally conceded, and that many children born with such defects are suffered to perish for want of proper and

timely surgical assistance, through either the neglect, ignorance, or mismanagement of midwives and monthly nurses.

With regard to the primary cause which determines these and other congenital vices, nothing of a definite character has as yet been ascertained, and the subject still remains a problem for future organologists to solve.

There are some malformations which do not depend upon an arrest of development, but are the result of intra-uterine diseases. The narrowing and contraction of the anus, with more or less thickening of the integument, is the result of an anal inflammation. At times this may result from preternatural activity of the sphincter muscle. In such cases the coarctation from being purely spasmodic may gradually become organic and permanent.

Peritonitis may occur during the life of the fetus, and giving rise to intestinal adhesions occasion malformations.

All deformities about the rectum may be conveniently arranged under seven headings:

1.—**Congenital narrowing of the anus or rectum**, without complete occlusion. The anal aperture is at times preternaturally small, either in consequence of a contraction of the lower end of the rectum, or from the fact that the skin may extend occasionally over the border of the anal margin. The outlet may be sufficiently large as to permit the meconium to drain away, or so small that the escape of excrementitious matter is impossible.

The symptoms, when prominent, will be vomiting and abdominal distension; when slight, some constipation and difficulty in voiding the feces.

The diagnosis is usually easy, for the contraction is near the anus and can be readily detected by the finger, or seen when due to a fold of skin extending across the anus.

The treatment consists in dividing the ring or skin on the dorsum and daily dilatation either with the finger or soft rubber bougie.

2.—**Closure of the anus by a membranous diaphragm (atresia of the anus.)**—The membrane in these cases may be of greater or less firmness and thickness, and may be composed of skin or mucous membrane. It is sometimes so thin as to bulge with meconium when the child coughs or strains and has been known to rupture spontaneously. This is the

simplest of all forms of congenital malformations, but unfortunately the rarest. It is easily diagnosed by simple inspection of the parts, and the treatment consists in making a crucial incision through the membrane.

3.—**Imperforate rectum.**—In this class one may expect to find some of the most difficult cases of malformation, although some are comparatively simple.

Instead of a normal anus the skin of the perineum extends across the anal region from side to side, and the rectum may terminate quite a distance from the normal site of the anus.

The intervening space may be made up of connective tissue, while a circular elevation or depression marks the normal site of the anus. Occasionally a distinct fibrous cord may be traced from the rectal pouch to the skin.

If the rectal pouch be not at too great a distance from the skin a sense of fluctuation may be felt by firm pressure of one finger over the anus and the hand over the abdomen.

4.—**Imperforate rectum with a normal anus.**—The septum which separates the anal and rectal pouches in these cases is generally within easy reach of the anus, and may be so thin as to permit a sense of fluctuation.

In most cases, however, the septum is thick and composed of cellular or fibrous tissue, lined both above and below by mucous membrane. It may be perforated like the hymen and allow the slow dribbling of meconium. There may be also more than one septum. Voillemier reports a case in which the rectum was divided into four distinct compartments.

There is usually but little difficulty in the diagnosis of these cases, but the danger lies in the fact that the presence of a normal anus is apt to allay suspicion as to the true nature of the difficulty.

5.—**The anus may be absent and the rectum open at any point in the perineum or sacral region.**—The lower portion of the rectum in these cases is usually of a fistulous character, lined by true mucous membrane, and the abnormal anus is always narrow and insufficient for its purpose. Occasionally the rectum terminates in two distinct openings, at a greater or less distance from each other.

6.—**The anus may be absent and the rectum terminate in the bladder, urethra or vagina.**—In the females the vaginal opening is the most common; in males the bladder open-

ing is the most common. This condition is usually rapidly fatal unless relieved by prompt surgical interference.

7.—**As a final group, the rectum or the large intestine may be entirely absent.**—The case I wish to report was a child three days old I saw in consultation with Dr. O'Malley. Nothing had escaped from the anus, the abdomen was greatly distended, and the child refused to nurse. An examination of the case showed a normal anus with a membranous diaphragm (atresia of the anus.) There was no bulging, and nothing to indicate the presence of meconium above this membrane.

We divided this membrane by a crucial incision and the finger passed readily into the bowel. I thoroughly dilated this portion of the bowel and waited a few minutes to see if any of the meconium came away. Nothing came. This rather surprised me, and I again introduced my index finger, and discovered that the canal ended in a blind pouch. Careful palpation failed to reveal the rectal end of the pouch at $3\frac{1}{2}$ inches. The question then arose as to the propriety of dissecting up the perineum and hunting for the rectal end of the pouch.

But as we could not locate the upper pouch I did not think it proper to subject the child to the great dangers of an extensive resection of the sacrum.

As a last resort I finally did a Maydl's colostomy, and after a great deal of trouble succeeded in finding a portion of colon in front of the left kidney and stitched it to the abdominal incision.

I opened the colon immediately and removed a large quantity of inspissated meconium. The child was then put to bed, freely stimulated but only survived the operation twelve hours.

I was unable to map out the exact anatomical arrangement of the pouches through the very small abdominal incision. A post-mortem was refused.

As to the general treatment of these cases the following rules may be considered:

1. An operation should always be performed, and performed without delay.

2. If there be any chance of establishing an opening at the normal site of the anus, the surgeon should at first direct his attention to this procedure.

3. The use of a trocar as an aid in finding the rectal pouch before or after incision through the perineum is not sanctioned by modern surgical authority.

4. The results of attempts to establish an outlet for an imperforate rectum through the perineum, are not favorable as regards the production of a useful anus.

5. In case of failure to establish a new anus in the anal region, colostomy should at once be performed.

6. In the formation of an artificial anus the left groin is the best site for the operation.

7. Attempts at establishing an anus in the anal region after a colostomy, are attended with great danger, and are generally unsuccessful.

DISCUSSION.

Dr. GIBBON: I assisted in a case last winter of this kind which was very interesting. This patient was a female child, with obstruction of the bowels; there was no bulging, no pitting at the part of the perineum where you would expect the anus to be. I do not know whether there was discharge from the vagina or not. Incision was made in the median line, the rectum sought and found about an inch from the skin. On pressure upon the lower end of the pouch it was found that fecal matter came out through the vagina. Digital examination revealed a very minute opening large enough to admit probe, very high up in the vagina. The incision was then enlarged, the lower end of the bowel dissected out of vagina, brought down into normal position. This child recovered. I imagine the reason it did recover was simply the fact that there had been an opportunity for a small amount of matter to pass through the vaginal opening before the operation.

There is one thing about these cases: I think they take the anesthetic worse than any other kind of patients; rectal cases always do take anesthetics badly, I believe. The child that I speak of came very near dying on the table and required persistent resuscitation.

Dr. JOPSON: I saw one case in the service of Dr. John Ashhurst, Jr., at the Children's Hospital during last winter which was very much like that described by Dr. Gibbons. It was a very young female child, and the rectum opened into the vagina. The child was not at all in a desperate condition, as

in the case described by Dr. Kirby. It was, however, deemed advisable to perform the operation at once. No anesthetic was used; a curved grooved director was passed into the rectum through the fistulous opening and cut down upon in the perineum and the rectum was found without trouble, comparatively near to the perineum; it was brought down, the skin stitched to the mucous membrane of the rectum and the opening into the vagina was left unclosed.

I saw the child in the dispensary, where it was brought daily for dilatation, and although we had considerable difficulty in keeping the opening patulous, it gradually healed up satisfactorily and an opening of good size was obtained. There seemed to be some sphincter action when I last examined the patient; although there is still a small opening into the vagina the child discharges fecal matter through the opening in the perineum.

Dr. W. S. NEWCOMET: I had a curious case turn up at the Southeastern Dispensary; when I saw the child it was about five months old. The mother gave a history of its having had two anal openings, one the larger, and one about three-fourths of an inch back of this, from which very little feces escaped. The child had had some diarrhea and after this it became very much constipated, so much so they had to use a spoon to relieve it. This lasted for two months, when diarrhea again set in, and this time the opening further back had entirely closed.

When I saw the child all that was left was a small pit of about quarter of an inch in diameter of pigmented skin, which appeared very much like another anus, although I could not insert a very fine probe. The child then had profuse diarrhea and under ordinary treatment got well. It did not use this second anus at all with all this diarrhea. Two months later the child had another attack of diarrhea and was taken to another hospital, where it died. The parents would not permit a post-mortem.

Another curious thing about this child was that it had two openings where the helix joined the face. It looked very much like an enlarged follicle, such as is sometimes seen on an old man's nose. I asked Dr. Piersol what he supposed this condition was due to. He said he supposed it was the remains of the bronchial clefts.

Dr. MARY E. ALLEN: I at one time had in my practice a

child with an anus opening into the vagina. The child seemed to be very badly nourished, the mother had not enough milk for it and it had to be put on artificial food and became very much constipated. It was exceedingly difficult to relieve the child under these conditions. The anus that opened into the vagina was very small; for a time it seemed to be relieved, and then became constipated again and most of the time it drew the head back as if it had some brain trouble, and suddenly one morning died without any apparent cause. They would not allow a post-mortem.

I also had under my care at one time a child about six years old. The history was when that child was born it screamed every time the bowels were moved, and had a great deal of trouble all the time up to coming under my care. It had no coccyx at all and I gave the child ether and dilated the anus and used bougies; afterward it was very much better, but there certainly was a great deal of fault in the nervous system of that child in more ways than one, and it is not yet a well child although the rectal condition is better. The water dribbles away all the time, and it has to wear an apparatus constantly. It had a club-foot; that leg has never grown to the size of the other, and there is a curvature of the spine.

Dr. C. J. HOBAN: Some ten years ago I had a case in which a considerable period elapsed between birth of child and the time I saw it. I found on examination the rectum ended in a pouch one-half inch from the anus. After telling the people it would be impossible for the bowels to be opened and advocating operation they refused. The child went on three weeks and nursing all the time, without any vomiting whatever. At the end of three weeks the pain became so distressing on account of dyspnea and pressure of bowels on the diaphragm that they consented to operation, and I performed posterior colotomy and found the bowels imperforate. I sewed up the wound and performed inguinal colotomy. Feces escaped and the child lived about three days.

Dr. E. R. KIRBY: I think in those cases in which the rectum opens into the vagina it is perfectly proper to make an opening through the perineum; if necessary resect the sacrum and endeavor to restore the continuity of the bowel in that way. Usually the upper end of the malformed rectum is within $1\frac{1}{2}$ to 2 inches from the skin. In true imperforate rec-

tum, unless you can feel the lower end of rectal body at a reasonable distance it seems to me hardly permissible to grope blindly for it. It is better to have recourse to inguinal colotomy.

In regard to Dr. Hoban's case I would say that several cases have been reported in which the children lived several months without having had a passage from the bowels. In one case the gut finally ruptured and the child died of suppurative peritonitis.

Stigmata of Degeneration in Epilepsy, was the title of a paper by Dr. A. Ferree Witmer. There were various findings in patients at the Pennsylvania Epileptics' Hospital and Colony Farm, and were classified under three headings, viz. :

- (A) Morphologic deviations from normal.
- (B) Functional deviations from normal.
- (C) Purely psychic stigmata.

Under heading *A* the stigmata particularly marked were asymmetrics of the skull and face, dental anomalies, inflammations of the skin, and marked pallor independent of any organic disease.

Under heading *B* were noted: retarded puberty, various anomalies of the menstrual function, gluttony, merycismus.

Under heading *C* tests were made to determine the higher mental activities, such as attention, memory and association. Each patient was requested to write as many words as possible in one, two and five minute periods, respectively; also to write from memory a spoken, written and a simple sentence when read; and lastly to write the associations of some familiar word (city, hospital, etc.). The results indicated a deficiency of mental activity when compared with groups of healthy children of equal age.

DISCUSSION.

DR. J. P. CROZER GRIFFITH: I would like to ask Dr. Witmer whether these defects referred to, particularly the mental stigmata, he would consider in any way *characteristic* of epilepsy, or whether they might not occur in many affections such as are in many instances produced by epilepsy. I have been interested in noticing the well-known slowness in learning to walk in very many mentally deficient children,

whether or not they had epilepsy, and have been looking carefully, too, into the condition of high arched vault of the palate, which is sometimes described as characteristic of the idiot, but without ever having been able to convince myself that idiots showed this any more than other children.

DR. MARY E. ALLEN: It seems to me that some of those mental defects may be caused by the medicines which are taken. One epileptic patient of mine had been taking bromide for some time, and the mental condition had grown worse and worse. I reduced the bromides and gave her salicylic acid, or sometimes salol or salicylate of sodium, and she became so much brighter mentally that she was able to write and remember things as she had not been for several years before.

DR. E. FERREE WITMER: In reply to what Dr. Griffith has said, I would say that the psychology of epilepsy is yet obscure. It will probably be known shortly whether there is an actual psychology of the disease, or whether the mental defects found in the disease simulate those found in other defects of which Dr. Griffith has spoken.

In regard to whether the drug treatment of the disease could cause these peculiar mental defects, I should be rather inclined to think that it can. I have known cases in which the bromide has caused such maniacal excitement as to cause the patient to jump from a second-story window, but I hardly believe, in the cases we have under our care, that such could be the cause, because they have not received any bromide for a period of four months; we have stopped the use of it almost entirely.



PRACTICAL NOTES.

Danger of Insufflation of Powders in the Ear.—Gru-nert's warning against the careless insufflation of powdered boric acid in purulent middle ear disease should be carefully taken to heart by the general practitioner. According to him the danger in using powdered boric acid consists in the formation of crusts in cases where the discharge is *scant*. This is particularly often the case in the most dangerous variety of ear disease, thus sealing up a small perforation. It is better for such as are not proficient in the use of the head-mirror, and who for that reason will not be able to recognize the contraindications for the use of powdered boric acid, to eschew this remedy altogether, as they might do more harm with it than good.

Blue Sickness.—A case of *morbus coeruleus* was shown by Litten. The case was that of a seven-year old boy, suffering from a high degree of blue sickness; the heart, curiously, is apparently perfectly sound, though in all cases published up to the present time a congenital heart defect was present. The case is explained through the transposition of the large arterial vessels, which has been observed in twenty-four cases, and therefore arterialization of the blood in the veins of the body is only maintained by the bronchial circulation. During the discussion Senator said that the case could also be explained by the fact that the aorta took its origin from the left and the right ventricle at the same time.

A. Fraenkel holds that a congenital heart defect may still be present, even in the absence of a murmur.

Prophylaxis of Purulent Ophthalmia.—Klumann mentions a case, regarding the prophylaxis of conjunctival blenor-rhea, in which, in spite of the immediate instillation after birth, of a solution of nitrate of silver into the eyes of a child whose mother was suffering from leucorrhea, conjunctivitis was not warded off, but made its appearance on the seventh day. He does not deny, however, that the infection might have been communicated later in this case. He had considerable success in the treatment of blenorrrhea with instillations into the eyes and washing them with a weak solution of creolin (one to two drops to a cupful of boiled water).

Lavage of the Stomach.—Olmier comes to the conclusion that lavage of the stomach in children will give positive results:

1. In every gastro-intestinal affection.
2. In all acute as well as chronic disturbances of the digestion; in these cases they should be employed daily until the vomiting and other symptoms have ceased.
3. In cases of intestinal occlusion from invagination.
4. In congenital constipation, and especially
5. In cases of poisoning.

Korn reports a case of **acute alcoholic poisoning in a child**. A boy nearly seven years of age had swallowed a large quantity of strong alcohol, which was followed immediately by deep intoxication, lasting ten hours. After this tonic, and later clonic, convulsions set in, from which the boy seemed to have recovered the next day. But again severe symptoms of inflammatory irritation of the cerebral meninges came on, and the patient only fully recovered after an illness lasting over four weeks. As therapeutic measures in such cases he would recommend the frequent repetition of hot baths with cold affusion on the head, followed by the continued application of an ice bladder. At the same time apply heat to the lower portion of the body. Caffein and antipyrin, carefully administered, are also recommended.

Cholera Infantum.—Cozzolino has made the excitors of cholera infantum the subject of profound study. The greatly diverse views on this disease cumulate in two explanations: Intoxication caused by the disintegration of albumin in the stomach, and a general septic infection with a preponderance of the symptoms in the gastro-intestinal tract. The findings in experimentally examined organisms have up to the present time been diverse and not uniform.

The author found in the gastro-intestinal tract a preponderance of higher micro-organisms (*sarcinæ*, *pencillium*, *oidium*; *bacterium coli*). An infection through the blood can be excluded (eight further cases).

Teratoma.—Swoboda describes a large congenital struma, removed by operation, which proved to be a teratoma consisting of neuroglia with ganglionic cells and connective tissue. The development of the child was considerably interfered with. Congenital struma is not at all rare, is usu-

ally a hyperplasia, more rarely cystic, etc., but always, and particularly the latter, dangerous to life in a variety of ways.

Chronic bronchitis, according to Lyon, is met with in children much more rarely than in adults. It is generally a sequel to an acute bronchitis. This transition, however, is favored above all by debilitating conditions (poor food, hereditary syphilis, scrophulosis). Rhachitis and diseases of the naso-pharynx have a tendency to keep up the disease. A general constitutional treatment is, therefore, of more importance than local treatment. Residence in the country is always to be recommended. Cod liver oil, iodide of iron, etc., are to be prescribed. As a local therapeutic measure the author finally recommends the old remedies, turpentine, creosote, etc.

Night Terrors.—Braun, after critically discussing the existing theories on *favor nocturnus* in children, declares it to be a disease by itself, which is closely allied to the conception of neurasthenia, i. e., “an irritable weakness.” Following this, a description of the characteristics of the attack and their demonstration is given. The sudden jumping up of the infant out of its sleep—symptomatic especially in colic—has no relation to night terrors. The etiology as well as the treatment is that of neurasthenia, and the latter should be pointed in the direction of nutrition and education.—*Der Kinderarzt*, 1897.

For Laryngeal Spasm.—

R Potas. bromat	
Sodia bromat.....āā	1.0 to 3.0
Aquæ destill.....	70.0
Syr. rub. id.....	25.0

Mix. Sig.—A child’s spoonful to be taken three to four times daily (Loos).

Intertrigo.—

R Europhen.....	2.5 to 5.0
Lanolin anhydr.....	2.5
Talc. venet., ad.....	50.0

Mix. Ft. pulv. Sig.—Externally.—*Der Kinderarzt*, 1897, VIII, 69.

ABSTRACTS.

INTUSSUSCEPTION IN AN INFANT SIX MONTHS OLD. RECOVERY AFTER PASSING A PORTION OF INTESTINE TWENTY-SEVEN CM. LONG.

STEINMEYER (*Munch. Med. Wochenschr.*, 1896, *xliii*, 989) presented the specimen of the intestine, which had been thrown off by necrosis. The following was the history: The infant, perfectly healthy up to this time, was suddenly taken with vomiting, discharge of a considerable quantity of blood from the rectum, without admixture of feces, meteorismus, and great abdominal pains. These symptoms gave rise to the suspicion of the presence of an intestinal invagination. The child went rapidly into collapse, refused the breast, and could only be nourished with a solution of egg albumen, cooled on ice. The vomited matter, at first odorless, began to assume a fecal odor on the third day. The child seemed doomed. On the fifth day a bloody mass, covered with mucus, presented at the anus, beside which a small loop of intestine hung down. Efforts at reposition were unsuccessful; gradually the intestinal loop protruded further and with it the vermiform process. It now became clear that the presenting portion of the intestine was the cecum. On the sixth day the vomiting ceased, the child drank the albumen water with avidity, and on the evening of the sixth day had a number of watery, brownish-colored stools with a strong odor. During the night it took the breast. On the seventh day a semi-solid yellowish stool was passed. The general condition now rapidly improved, sufficient nourishment was taken, and the abdomen became softer. On the evening of the seventh day he found imbedded in a movement this portion of intestine. The child recovered rapidly, took the breast regularly, and is to-day perfectly well. The portion of intestine consists of ileum, colon with vermiform appendix and a portion of the ascending colon.

TREATMENT OF CARIES OF THE SPINE BY MEANS OF SUTURING THE SPINOUS PROCESSES.

A. CHIPAULT (*La Mèd. mod.*, 1896, *vii*, 465). The patient, after having been chloroformed, is placed upon the abdomen in three-quarters pronation position, with his back facing the operator. An incision is now made along the spinous processes which extend over the borders of the spinal curvature, above and below, by at least two or three vertebræ. Without touching the interspinal ligaments, the row of the spinal processes is laid freely bare, and the soft parts drawn out of the way. An attempt is now made to reduce the gibbus by having

an assistant pull in the axillary region upward, and another make downward traction on the lower extremities. After reduction has been made, as well as it may, a silver wire, of thickness suitable to the case, is passed through the ligamentum spinale. The silver wire is cut off in such a manner that a piece of thread, twice as long as the incision, remains hanging on each side of the perforation. With these two silver wires suturing together of the spinal processes is performed. For this purpose the two wires are crossed, and each one is passed separately through the ligamentum interspinale, situated immediately below, then through each successive one, until it reaches below the lowest of the exposed spinal processes. The two wires are now firmly twisted on each other by rolling them together at their ends. It is of great importance to pass the wire through each interspace, exactly at the same height as the lower edge of the overlying spinal process, so that the upper portion of the spinal column can be stretched from this firm support and kept in extension; no new loop must be applied until the firmness of the preceding one has been established. After all of the exposed spinal processes have been joined in this way, the soft parts are drawn together without drainage, the bandage is applied, and the patient put to bed. In this very simple operation, which generally takes only one quarter of an hour, two difficulties may occur: (1) An ankylosis between the upper and lower margin of two neighboring spinous processes, in which case it will become necessary to bore a hole between the two adherent processes. (2) There may be present, beside the kyphosis, slight lateral deviation. In this case, after the application of the sutures, one of the wires must be drawn up by the side of the spinal processes, on their convex side, made tense, firmly drawn upon, and fastened to the upper sling. In five to six days (in disease of the lumbar or dorsal region), or in ten days (in affections of the cervical region), the first bandage is changed and the sutures removed from the soft parts. Orthopedic treatment must be pursued at the same time, and after the operation strict immobilization of the sutured spinal column should be practiced. This operation makes an important advance in the treatment of Pott's disease, but is indicated only in slight forms of gibbus, where the affection has a sudden beginning or a rapid development, and where the prominence can be more or less easily reduced. The procedure is contraindicated in cases of advanced deformity, where destruction of a great number of vertebræ has already occurred; the presence of a cold abscess or paralysis are not contraindications to the operation.

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ORIGINAL ARTICLES.

SOME REMARKS UPON MEASLES, PROMPTED BY THE RECENT EPIDEMIC IN LOUISVILLE.*

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the Hospital College of Medicine, etc.

MY apology for inviting your attention to one of the most common of the exanthemata is that we have all seen more or less of it during the past winter, and because its sequelæ will for some time remain as etiological factors in producing special diseases. The epidemic has been a most thorough one, and as no especial care has been taken to arrest its progress, it will continue until all susceptible material has been exhausted. A comparison may here be profitably made to show the wisdom of our Health Office in establishing strict quarantine regulations and the placard system in regard to scarlet fever and diphtheria. On opening the schools last fall, both of these deadly diseases developed in all parts of the city. The ordinances regulating these two diseases were then well enforced, and in about six weeks placards became less conspicuous, and a decline in the number of cases soon followed. In regard to measles no such regulations have been enforced—which, as I shall after state, I believe to be a point of wisdom also—and the result has been a widespread epidemic, few susceptible children escaping. Although the disease has been most general, the epidemic must be considered benign, as few cases of malignant measles were reported.

* Read before the Louisville Medico-Chirurgical Society.

The statement which I made in a former paper when scarlatina was under discussion will, I think, apply to measles as well, viz. : that the frequent appearance of the disease tends to diminish the severity of the epidemic. Although one of the oldest exanthemata there were parts of the world in which measles was unknown up to the present century. Its introduction into the Spanish colonies of the Philippine Islands was attended by great mortality. In the Fiji Islands, in 1875, the mortality was 40,000 in 150,000 inhabitants, or about one in three. In Europe and America the death rate in proportion to the number of inhabitants is about 1 to 2,000. In this epidemic not over two or three per cent. died.

Measles may be considered as a far less dangerous disease than scarlet fever. The observation, frequently made, that all the eruptive fevers are more severe in the dark-skinned races is probably true. The fatality above noted in the Philippine Islands is equaled by the fatality of smallpox among the aborigines of this country. Fewer people escape measles than any of the eruptive diseases. It is not uncommon for a whole community to escape scarlet fever, and adults who have thus escaped in childhood are not likely to contract the disease. It is not so with measles. Maturity seems to offer very little, if any, immunity, and adults, if exposed, are quite certain to be affected. Moreover, measles is a much more formidable disease in adult life. Complications are more frequent and disastrous.

In the winter of 1863 measles appeared in the quarters of the soldiers. I can never forget the daily, almost hourly, funerals in camp. Most of this frightful mortality among the troops was due to exposure, the men being often compelled to sleep upon straw in tents around which the snow had drifted. There is every reason to desire that children should have measles while under the parental roof and under maternal care. Among young men who are out in the world, either at college or in business, there is a greater mortality, which is probably due to the same causes as in camp life. If the statements given by adult patients may be taken, it would appear that measles affords less immunity than the other diseases of this group. Many who are attacked claim to have had measles in infancy or childhood. I believe that not a few of these instances are due to a faulty diagnosis of some of the rashes

so common in infancy and which have no relation whatever to measles, e. g., *morbilli sine catarrhalis*, *rubella* or so-called German measles, a disease far more common than supposed, partaking of the nature both of scarlatina and measles, and protecting from neither.

It has always been conceded there are some peculiarities belonging to measles which are not characteristic of other exanthemata. It is well to bear these peculiarities in mind in order to avoid mistakes in diagnosis. While the incubation of the measles microbe requires the same length of time as chickenpox, smallpox, whooping-cough and mumps, the initial stage requires three days of fever and coryza, and the eruption appears on the fourth day, preceding which there is a notable drop in temperature. It is this decline in temperature with a slight amelioration of symptoms which causes one to say we are mistaken, it is only a "bad cold," when *presto* the rash appears, and with it a rise of temperature, which remains throughout the eruptive stage.

The cough is quite diagnostic, and when taken together with sneezing and lachrymation, may be sufficient to predict the appearance of the disease. The cough is apt to be confounded with that of catarrhal croup. In fact the condition of the larynx is analogous to croup, but the absence of stridor and aphonia is sufficient to make the distinction.

A point of the greatest practical importance is the knowledge of the affinity of measles for mucous membrane. In describing the epidemic of scarlatina a year ago it will be remembered that I laid equal stress upon the importance of recognizing the affinity of this disease for serous membrane. Thus it is in measles we expect bronchitis, bronchial or catarrhal pneumonia, ophthalmia, entero-colitis, vaginitis, etc., while in scarlatina we watch with anxiety the joints, peri- and endo-carditis, peritonitis, pleuritis and meningitis. While the above rule will be found in the majority of instances to be correct, cases are not wanting in which rheumatism and consequently endo- and peri-cardial complications have occurred as a sequel to measles. We are often too willing to declare the absence of conditions for which we are not in the habit of examining. The presence of albumin in the urine will frequently correspond to the period of desquamation of measles. It has always been conceded from observation that measles

tends to the development of tuberculosis. It was formerly considered to stir up a latency in heredity very much after the fashion that a harrow dragged over the finest turf of blue grass will cause a crop of weeds to grow. Since we know more of tubercle, the observation of former years admits of a different explanation, but the fact that tuberculosis follows measles with remarkable frequency still remains. The affinity of the measles microbe for the mucous membranes, especially of the respiratory tract, has already been conceded. No more admirable preparation for the soil to receive and foster the tubercle bacillus can be imagined. The lingering cough, especially if accompanied by a low grade of fever and anorexia, weeks after the time allotted to the exanthem, should awaken the most anxious solicitude on the part of the practitioner, and demands a well-directed physical and microscopical investigation. Less frequently, it has been observed that measles has been followed by a marked improvement in children who have been considered delicate, or who have been afflicted with some chronic disease, as infantile paralysis, rheumatism, asthma, etc. Explanation of such rare instances may possibly be found in the benefit which not infrequently attends peripheral counter-irritation.

Re-Infection.—Four children were confined in one room, an upper chamber, with measles. The injunction of darkness, warmth and danger from draught was sedulously observed and obeyed. The apartment had the well-marked peculiar musty, mousy, smell of measles. Two of the children were attacked a second time with measles during convalescence, whereupon the room was exchanged for another apartment and opened up to the air and sunlight, the children recovered and no further infection occurred. The presence of fresh air, without draught, is easily obtained by middle sash ventilation, which should be advised in all cases of respiratory affections, putting in a nicely fitted board at the base of the sash.

It has happened to me to see two cases of noma in a former epidemic of measles in Louisville, but these cases succeeded measles, and were in children of depraved constitutions, and in bad hygienic surroundings; both of these cases, a girl and a boy under ten years of age, died in collapse. The following case is unique from the fact that it occurred in one of the best families, amid the best hygienic surround-

ings, in a salubrious part of the city and in an infant under two years of age who was the type of health and beauty. It occurred in an atmosphere of measles, as mentioned in *Sarjou's Journal*, and did not succeed measles, for, outside of the fact that the other children had measles in the same apartment, no one would have recognized measles in the baby at any time prior to this.

There was no eruption, no coryza, and very little and insignificant cough, and very little temperature. The depression of spirits was, however, marked from the start, and in a few days from the initial complaint of painful micturition it was evident that a mortal disease had laid hold upon the babe. She died in collapse with profound septic symptoms in five days after the vulvo-vaginitis was detected. The case was so strange and remarkable that permission was asked and granted for a *post mortem* examination. This revealed a complete gangrene of all the internal parts connected with the vagina up to the uterus; blebs, which was perfectly black and beginning to slough, extended above the mons veneris. Microscopical examination revealed various cocci, some of which resembled diplococci but none others recognized as pathogenic. Unfortunately the micro-organism of measles is not yet known.

Dr. Hott in his recent work devotes a short space to "Gangrenous Vulvitis." He states that it is the same condition as that seen in the mouth and known as Cancrum Oris. It usually follows one of the infectious diseases, most frequently measles, occurring in patients whose general vitality has been greatly reduced. Day by day the gangrenous area advances, preceded by induration. It may involve the whole labium, extending even to the "mons veneris" and to the perineum. "These cases," he further says, "are generally fatal." If recovery takes place it is with considerable deformity of the parts in consequence of the external sloughing and cicatrization. The prognosis is very bad. He concludes by saying: "The radical treatment is early excision of the gangrenous part, and the application of the actual cautery or nitric acid." From my army experience with gangrene I should again have confidence in bromine over all other agents. It will be seen that the above description, while it covers my case, includes some essential points of difference, viz: The previous health of the infant was excellent. Up to the time of the first complaint she

presented the type of good health and beauty and had had no severe illness, since an attack of pertussis in the previous summer. Second, the vulvitis did not follow the exanthem, but preceded it, and so far obscured the eruption that it was not discernable. Sarjou in his *Journal* covers the question by saying that such cases may occur in an atmosphere of measles.

This certainly is established, as the other children had typical cases of measles in the same apartment.

The treatment of measles should be directed to the prompt development of the eruption. For this purpose the iodides with diaphoretics are justly entitled to consideration. Tincture of belladonna in small and frequently repeated doses is of great value and is well borne by children. In cases of retarded eruption, the sheet pack wrung out of hot water in which a tablespoonful of mustard flour has been steeped, has proven effectual. Purgatives administered during the eruptive stage are prejudicial and their injudicious use has been followed by disastrous consequences, causing peritonitis and enterocolitis. The bowels, if constipated, should be relieved by enemata. The habit so much in vogue in domestic practice of giving hot drinks, etc., is altogether unnecessary. Good, cool and pure water is to be allowed *ad libitum*, and when so used it constitutes the best diaphoretic, diuretic, and expectorant.

The apartment in which the patient remains should always be selected by the physician. It should be airy and well ventilated, without draughts, and with facilities for maintaining a moderate amount of darkness, and an equal temperature, night and day, of 70° F. There should also be a means of producing moisture in the air. The prescriptions which have proven of greatest benefit in my hands have been as follows. To develop the eruption and allay incessant laryngeal cough:

℞ Syrup hydriodic acid,
Syrup dover,
Syrup tolu..... aa ʒ i

The dover's syrup to be lessened for infants.

During the eruptive stage and throughout a broncho-pneumonia.

℞ Pot. acet..... 3 ii
Spirits mindeneri,
Aquæ camphor..... aa ʒ iii

Give a teaspoonful every hour to a child, and a tablespoonful every hour to an adult. This treatment should be accompanied by copious draughts of water. In case of sepsis, diphtheria or debility, I add to the above one drachm of the tincture of the chloride of iron, which makes a sort of Basham's mixture, pleasant and effective.

STIGMATA OF DEGENERATION IN EPILEPSY.*

By A. FERREE WITMER, M.D.,

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DEGENERATION is defined by Larkester as a gradual change of the structure in which the organism becomes adapted to less varied and less complex conditions of life; in short a morbid deviation from the original type. In my opinion it makes but little difference whether the deviation consists in mere arrest in growth, or in actual change of structure. The individual in whom the deviation occurs, no longer able to meet the changing requirements of civilization, is outclassed by his fellows, *i.e.*, degenerates.

To Morel belongs the credit of first pointing out that certain people are born with a tendency to degenerate. He further noticed that these people had certain marks or stigmata by which an experienced eye could detect the tendency.

Lombroso has elaborated the idea of such abnormal modifications in application to born criminals and has made them an important element in estimating the extent of the degenerative process. Thus when four or more stigmata are found in a criminal he is called a complete type, when three are found he is called a half type, and when two or less are found he is considered no type at all.

As criminals are now considered to be members of the defective class it would perhaps be allowable to apply this limitation of Lombroso to other of the defective classes.

These abnormalities or stigmata of degeneration have been arranged by Meyer for convenience of study into three groups, *viz.* :

*Read before the Pediatric Society of Philadelphia, April 9, 1897.

- A) Morphological deviation from normal.
- B) Functional deviation from normal.
- C) Purely psychic stigmata.

We have adopted this classification in our studies of the epileptic in the Pennsylvania Epileptic Hospital and Colony Farm.

Those of us who are familiar with the epileptic insane, recognize a distinctive epileptic facies. This appearance is partly due to the mottling of the skin induced by bromide poisoning and also to the vacant almost characteristic expression of these patients.

On close observation of the epileptic in the earlier stages of the disease we have found the following abnormalities: Under heading A) Morphologic deviation from normal, or the anatomical stigmata, we find one marked case of plagiocephaly, in which the asymmetry of the skull is marked.

Lombroso says of this stigma that it constitutes one of the special characteristics of lunatics, especially epileptics.

The importance of this stigma can hardly be overestimated when we remember that the tendency of evolution in the skull is to more perfect symmetry. We find three cases of facial asymmetry of congenital origin as opposed to the asymmetry resulting from hemiplegia. In these cases the asymmetry was so pronounced that it attracted general notice. Slight facial asymmetry is common among normal men and women (six per cent.): in the best physical types there is harmony in this as in other respects. In many normal cases recently studied by Dawson there was a difference of a little less than one millimeter in the ten sides of the face.

In one of our patients there is a difference of twelve millimeters.

Deformities of the palate have received much attention of late. In view of the diversity of opinion regarding the shape of the normal palate we are unable to say that any were stigmatic; certainly nine were of the generally accepted pathologic form. In forty-four cases studied by Clouston, the palate was considered deformed in 33 per cent. The various abnormalities of the palate have been recently carefully studied by Peterson, who says: "Show me your palate and I will probably be able to tell whether you belong to the great class tainted by heredity, comprising many insane, imbecile,

feeble minded, criminal, eccentric, epileptic, hysterical or neurasthenic individuals."

No deviation or deformity of the *uvula* was noticed in any of our cases.

No increased percentage of eye defects was obtained, although Dawson claims that 14 per cent. of epileptic boys showed contraction of the visual field or myopia. There were various modifications of the pinna of the ear, but nothing particularly marked. The principal stigmata of the degenerated ear are excessive structural development of or absence of the helix; bifurcation of the anthelix; widening of the fossa scaphoidea; complete absence of lobule, asymmetry of the two ears. Knecht (quoted by Peterson) has found twenty-seven per cent. of deformed ears in the examination of forty-eight epileptics.

Of the abnormalities of the limbs and of the trunk we find one case in which the little finger was bent, preventing full extension, and one case of scoliosis. Anomalies of the genital organs in the female we find rather common. The following is the report of the gynecological examination made by Dr. G. E. Shoemaker, and is typical of 25 per cent. of our cases: "Adeline M. has a small and poorly developed uterus, retroverted to the horizontal, without pathological ovarian or tubal condition, and belongs to the class of congenital defectives." Of the skin anomalies we find inflammation resembling the bromide acne appearing periodically in one of our patients who has not had bromide for over three months. Petechial and slight erythematous rashes of evanescent character are frequent. We desire also to call attention to a peculiar pallor of the skin, independent of any organic disease; this was noticed in three of our patients.

Under class B) or Functional deviations from the normal we find in 20 per cent. of the patients a delay in learning to walk. One of our cases did not walk until the fourth year of life, though now quite active.

Defective speech was noticed in three cases; this consisted of a lack of clearness in articulation.

Gluttony was found in 40 per cent., merycismus or rumination in two; in one case, a girl of eighteen, puberty is not yet completed.

The third division, section C, of Meyer's table, psychic

stigmata, is illustrated by many patients in our wards. The lower intellectual qualities of the epileptic class are usually sufficiently obvious; the higher, such as attention, memory and association are not as clearly marked, but yet we find various abnormalities in these states. The power of attention is probably the highest of the mental activities; it is defined by Wundt as "the state of mind which accompanies the clear grasp of any psychical contest and is characterized by a special feeling." It is necessary, therefore, that the mind be carefully balanced to receive the impression.

To test the attention twelve of our patients of an average age of sixteen were requested to write a series of words—as many as possible—for one minute, then for two minutes, and finally for five minutes. The number was then compared with the number of words written by normal children of the same age. This has been found to be sixteen per minute. The result showed a decided decrease in number of words. Two of our patients wrote for only one minute, one for only three minutes, making a total of five words a minute. The element of fatigue so soon setting in is a very suggestive feature in these cases. In testing the memory a simple sentence was spoken, another read to them, and a third each patient read from a book. At the end of each sentence sufficient time was allowed each patient to write what had been heard or seen. Three of the patients made no attempt to write, two others began but did not finish the sentences, while the majority of the others wrote sentences in which the words were more or less transposed.

To test the memory and attention combined, i. e., association, familiar concrete nouns were given and the patients requested to write of what the word suggested. Two minutes were given each patient for writing these ideas. In four of the twelve cases the results may be considered average, twenty or more words being written; in five the association was unsatisfactory, ten or less words being written in the ten minutes; in three cases the result was nil.

Other experiments could have been made to test the mental activities, but sufficient I think has been done to show the inferiority of the epileptic class. It was with the hope of arousing more interest in these too often neglected cases that this paper was written.

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VICIOUS PROPRIETARY REMEDIES.

By JOHN B. SHORE, M.D.,
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I WISH to call the attention of the profession to the evils following the use of proprietary articles of unknown composition, and especially to the bad effects upon the bowels when these preparations contain an opiate (as nearly all do) and are administered by the laity without consulting a physician. My own attention was attracted to one remedy in particular, by a series of cases occurring within the past year, and which I will briefly detail.

Case 1 was a girl three years old, who, her mother said, had suffered by reason of constipation for a year or more. She was healthy in every other respect. At the time of voiding the feces she would strain and cry out and give other evidences of severe pain, and the fecal matter was always hard and dry, covered with bloody mucus. Inquiry as to diet revealed nothing to account for this condition, but the mother said she had used a laxative since the child was three months old, and that it always "quieted" her. Suspecting morphine or other opium preparation in the preparation, I ordered it destroyed, no more to be used, and put the child on strychnia and belladonna, treating the fissured and abraded anus locally, and she has not been troubled with constipation since.

Case 2 was a boy two and a half years old. Parents said his bowels had always been very irregular since the first week of life. Appetite was very poor, and child was badly nourished. History of constipation alternating with severe diarrhea was given. An old doctor (a non-graduate) had been treating him for a year for the bowel trouble, saying that the child was "strumous." I found that a neighbor had advised the use of this patent preparation for restlessness and some slight ailment when the child was about two weeks old. The parents had continued to use it. Remembering my first case

of this kind I ordered castor oil. There was no movement after several doses had been given, so I ordered enemata of hot water, to be continued at intervals. During the next forty-eight hours nearly or quite a quart of hard, lumpy fecal material was passed, the balls and clumps being almost absolutely dry when broken open. I discontinued the patent preparation and gave a tonic treatment, with a perfect recovery.

Case 3 was a girl *æt.* five years. She was in convulsions when I first saw her. The history was about the same as the preceding one, i. e., constipation, alternating with diarrhea, and a habitual use of this drug. An enema produced the same hard, dry lumps of fecal matter. Recovery was complete after stopping the use of the patent medicine.

Case 4 was a girl seven months old. She also was in convulsions when I saw her. When questioned about the bowels the mother said this child, as well as her two others, was "naturally costive." Further questioning discovered the much-prized patent medicine which had been administered to all her children when they became out of sorts about anything. The mother said she "hated to hear them cry." In this case I gave only one dose of castor oil, ordering it repeated as needed. The child has acquired a healthy bowel action and is doing nicely. These people had lost one child aged six months, the diagnosis being given as "occlusion of the bowel."

Of course I have no direct evidence that this patent medicine was responsible for these troubles. But it seems to me very probable that it was. They all promptly recovered when it was suppressed.

I make this report so that other members of the profession may be on the watch for similar preparations as a cause or at least a factor in the etiology of constipation in children.



EDITORIAL.

NEUROTIC CHILDREN AND MODERN EDUCATION.

A VERY notable feature of these times is the number of persons afflicted with neurotic tendencies. It is certain that never since the world was first peopled have nervous complaints of all kinds been so prevalent as they are now. It is probable, too, that this country contributes a larger proportion of sufferers from various forms of neurosis than any other. The literature of the day teems with neurotic characters, and in Sarah Grand's "Heavenly Twins" the early type is depicted in a masterly manner. To trace the causes of a neurosis back to its origin would be beyond the scope of this article, as well as beyond the powers of the writer. However, it may be laid down as fact almost universally agreed upon that the primary and principal causes are phthisis, syphilis and alcoholism, while unhealthy environment and infectious diseases must be held responsible for the taint in some instances. The present generation is doing penance for the sins and misfortunes of its fathers and forefathers, and the large majority of diseases of a neurotic character have been handed down from parent to child. That the neurotic taint has been most often thus transmitted has been conclusively proved. Neuralgia, epilepsy, neurasthenia, are the forms of neurosis most commonly met with, of which hysteria is the most interesting and important. The change that has come over the minds of alienists in respect to hysteria is very remarkable, and is chiefly due to the investigations and teachings of the French neurologists, headed by Charcot. With the French School the opinion is held that hysteria, both in the infant and adult, must be put down wholly to heredity direct or indirect, although of course they allow that certain accidents can excite and render active this latent predisposition, such as education,

emotion and contagion, and, in the case of adults, traumatism. When it is allowed on all sides that heredity, if not the sole, is at any rate the principal cause of hysteria and the other manifestations of neurosis, then it must be also granted that in the judicious supervision and careful bringing up of children lies the remedy and possibly the cure. The existence of the neurotic tendency in an individual does not preclude the possession of talent or even genius. Max Nordau, indeed, holds the theory that to be a genius one must of necessity be a degenerate; that the possession of those mental qualities called genius is in itself a sign of neurosis. Neurotic children are often, in addition to being mentally gifted, physically precocious. Still, notwithstanding the fact that children born with an inherited taint may be to outward seeming both physically and mentally vigorous, yet they will not last, nor is the strain likely to be perpetuated, but will, after going through various stages of degeneracy, ultimately become extinct. Over-pressure in education, and this is a point especially dwelt upon by the French School of neurologists, is in very many cases the cause of the breakdown. Signs of over-pressure are seldom met with except when there is a morbid heredity. These children are not only affected by the over-strain of work, but there must also be taken into account, in these days of competition and cramming, the play of the emotions caused by the excitement and worry of a prospective examination. The truth should be impressed upon the minds of teachers that to unduly exert the brains of young and highly nervous children is dangerous to a degree, and not infrequently the first step in the direction of the madhouse. Parents, also, who aware of the nervous temperament of their offspring, should be on their guard against the dangerous pressure of competitive examinations. It is surely also the duty of doctors to protest against many of the unhealthy methods in vogue now in modern education. That every school should be under medical supervision has been frequently suggested,

but up to now the suggestion has not been fully carried into effect. If this plan is not feasible, or until the difficulties in the way have been overcome, why should not the teachers be instructed so that they may be able to gather from some palpable signs, as extreme restlessness, for instance, that it will be inadvisable to enforce discipline liable to produce serious results. In connection with this matter the late Dr. Octavius Sturges gave (in a paper read at the International Congress of Hygiene) the pitiable history of five cases of what he terms "school-bred chorea." These unfortunate children were kept hard at work despite their uncontrollable restlessness, of which the teacher did not understand the significance, and were only taken from school when the mischief had been done and chorea had gained so strong a hold on them that at times they were not able to speak." School teachers can, if they are competent and willing, do good service in observing the mental peculiarities of children. This truth was well demonstrated in an article in PEDIATRICS of October, 1896. The school teacher has the opportunity of observing and drawing attention, at an early stage, to many significant defects of children both mental and physical, and while these failings can still be benefited by remedial treatment. The earlier a correct diagnosis of hysteria and its allied complaints is made, the better the chance will be of treating the case with the hope of beneficial results. With young children more attention should be paid to physical education and to the laws of health and less to overloading the brain with a multitude of subjects many of which will be of no earthly use in after life.



EDITORIAL COMMENTS.

Gastro-intestinal Troubles in Infants provoked by Mothers' Milk. The dangers attending artificial feeding in the rearing of infants is well recognized and the literature on the subject of late has been diffuse and voluminous. There is another cause of indigestion in the new-born, which, though not much heard of, yet is not so uncommon as it is generally supposed to be—the indigestion occurring in breast-fed infants is referred to. As a rule the indigestion of mothers' milk is intestinal rather than gastric, diarrhea being more often met with in such cases than vomiting. The causes are many which may give rise to this indigestion—unsanitary conditions, for instance. Ill-health and debility, neurotic tendencies also among the over-educated, may render a mother unable to produce healthy, nourishing milk. Occasionally, however, cases arise where mothers' milk has a really very serious effect on the child; such an instance is reported in the *Presse Médicale Française*, by M. I. Babeau of Montpellier, who says: "The woman in question had given birth to three children, none of whom could be fed at the breast, owing to the fact that immediately after suckling, the infant vomited violently. Hygiene or medicine was powerless to prevent the accident. The vomiting only ceased when artificial nourishment was substituted for mother's milk or when the children were nursed by another woman. Other infants without former gastro-intestinal troubles presented the same phenomenon when put to this woman's breast; so the conclusion arrived at was that the fault lay wholly in the milk. The mother was in excellent health; there was no former pathological history; she had suffered from no infectious maladies, nephritis, alcoholism or mercurialism. An analysis was then made of the milk, which showed that it contained considerably more than the normal

quantity of albumen (especially lacto-albumin and lacto-protein). Not infrequently the practice of suckling children at irregular times will produce indigestion, as babies, like adults, flourish best when fed with regularity."

Antiseptic Treatment of Diarrhea in Infants. For the last five years much time has been expended in seeking the part played by bacteria in infantile diarrhea. A toxic origin was suspected long before the era of microbes. Escherich was the first to settle the question of the origin upon a scientific basis, he demonstrated that the usual common cause of infantile diarrhea are the bacterium coli and the bacillus lactis. It will be easily seen how great an influence the bacillus lactis must have in the majority of cases of infantile diarrhea and how a temporary discontinuance or reduction of the milk diet will exercise a salutary effect in checking the progress of the disorder. The French claim to have tried with satisfactory results the treatment of infantile diarrhea by means of the antiseptic properties of water. The methods of procedure, which are described in *Journal de Clinique et de Thérapeutique Infantile*, January, 1897, are as follows: "The child is allowed no nourishment for 8-12-24 hours, and during this time it is given in small mouthfuls at half-hour intervals or every time it is thirsty, water which has been boiled and cooled to a suitable temperature. The quantity of water administered may reach a litre and a half per day." Of course the principle of this treatment is to rest and cleanse the overworked intestines, at the same time maintaining the blood pressure by the quick absorption of the water.

Chicken-pox and Some of its Peculiarities. Chicken-pox is usually regarded as a complaint of so trifling a nature that oftentimes it is hardly considered necessary to keep the child suffering from it in bed. Doubtless as a rule the ailment is not of a very serious nature, but on the other hand it is not wise to treat it too lightly. Various complications may

appear, the most common of which is erysipelas, but nephritis is more liable to occur than is generally supposed to be the case. The fact, too, that chicken-pox is often concurrent with other infectious maladies, notably scarlet-fever, should be taken into account. There are a few fairly well authenticated cases of re-infection of chicken-pox in children within a year of the first attack. According to M. Roudet varicella is frequently accompanied by a mild sore throat, and he has also been able to verify the existence of a varicellous eruption on the buccal mucous membrane. Osler and other writers do not mention that the eruption may occur on mucous membranes as well as the skin. M. Roudet proceeds to say that chicken-pox resembles small-pox inasmuch as the eruption may break out in the larynx, and quotes examples to substantiate his statement. The diagnosis of varicella is in some instances difficult to differentiate from small-pox. J. Walsh, writing to the *Therapeutic Gazette*, says: "In opposition to the teaching of many authors he has found there may be high fever (104 to 105 Fahr.), a macular and papular rash, and an inflammatory areola around the vesicles which may be confluent, umbilicated, partitioned and pustular, and finally may leave depressed cicatrices not unlike "pockmarks." Halot, Hatinel, Labbé and others affirm that staphylo-streptococcic infection may be a complication of varicella.

Playgrounds for New York Children. There is good news for the little ones of New York. It has at last been decided that they are to have playgrounds. The boon has been long in coming, but now there appears to be no doubt that it will soon be obtained. New York, shut in as she is, requires breathing spaces more than any large city in the world. The density of the population in the tenement dwelling portion is fearful, and is in that district by far more thickly populated than the most congested district of London, and, besides, is not nearly so well provided with what have been aptly termed lungs. One

of the first decisions arrived at by the committee appointed by Mayor Strong was, that in the future no public school should be erected in New York without an open-air playground. The want of ground is of course the greatest difficulty to be overcome. With two to three thousand children in one school it is impossible in the crowded districts to find an area of sufficient size.

The school builders in their perplexity turned to the roof for a solution of this problem. They had been tried with success elsewhere and for other purposes, and why not, then, for playgrounds. This idea will be carried into effect, and soon the novel sight will be seen of these aerial playgrounds. This decision on the part of the municipal authorities is a wise one, for the fact cannot be doubted that the effect, both on the mind and body, of outdoor recreation is of the greatest value to young children.



PRACTICAL NOTES.

Worms.—Comby recommends the following formulæ for the removal of oxyures vermiculares.

1.	R	Infus. filicis maris (2.0).	200.0
		Glycerin	20.0
Sig.—For a clyster.			
2.	R	Aq. commun	150.0
		Glycerin	30.0
		Ether. sulf.	M xx.
3.	R	Asafetida	3.0
		Vitell ovi	no i
		Aq. fontan	150.0
4.	R	Summitat, absinth	10.0
		Ad. inf. c. Aquam	150.0
	M		
5.	R	Tinct. rhei	
		Tinct. zingiber	1.0
		Aq. font.	150.0
	M		
6.—	R	Naphthalin	1.0
		Ol olivæ	60.0
	M	Ft. sol.	
7.—	R	Menthol	0.25
		Ol. olivæ	60.0
	M	Ft. sol.	
8.—	R	Santonin	0.50
		Aq. fontan	150.0
	M	Ft. sol.	

Each one of these clysmata is effective and should be used after a previous washing out of the bowel, and should be retained by the child as long as possible.

The following ointments may be used to prevent the parasite from crawling out through the anus and to relieve the itching.

1.—	R	Vaselin	30.0
		Calomel	3.0
	M	Ft. ungt.	
2.—	R	Amyl-glycerole	30.0
		Ungt. ciner	10.0
	M	Ft. ungt.	

3.—R	Lanolin	
	Vaselin, aa.....	15.0
	Hydrarg. ppt. subr.....	0.30
M	Ft. ungt.	

Or the following suppositories may be used.

1.—R	Butyr. cacao.....	2.0 to 3.0
	Calomel	0.1
M	Ft. Supposit.	
2.—R	Butyr. cacao.....	2.0
	Ungt. ciner.....	0.1
M	Ft. supposit.	
3.—R	Butyr. cacao.....	
	Extr. quassiaë.....	0.1 to 0.15
M		

The best treatment consists in the administration of *santonin* 0.05 with *calomel* 0.10 every morning on the empty stomach, for three days successively, in a tablespoonful of milk, and the anointing of the anus at night with

	Amyl-glycerole	20.0
	Ungt. ciner.....	10.0
M	Ft. ungt.	

This method is very successful and may be repeated at any time. The method recommended by Ungar consists in using a clyster containing fifteen to forty centigrammes of *naphthalin*, four times daily, according to age, for three days. It has not given as good results, however, as *santonin* and *calomel*.—COMBY, *La méd. mod.*

Hereditary Syphilis Simulating Adenoid Vegetations.

—A tertiary syphilitic disease of the pharyngeal tonsils may occur in children, which gives rise to symptoms like those of adenoid vegetations. Two cases were reported, one occurring in a child ten years of age, and the other in a child fifteen years old, in which the diagnosis of adenoid growths had been made, until perforation of the soft palate exposed the true nature of the disease. There are no differential diagnostic points, except that the sudden occurrence of adenoid vegetations in older children, with difficulty in deglutition, might lead to some suspicion of the true nature of the disease.—*Fortshritte der Medicin*, 1897, xv, 74.

Diagnosis of Impetigo Contagiosa.—Dr. Cantrell, in speaking of diagnostic appearances of diseases, said that the crust of *impetigo contagiosa* was rather pathognomonic of the

condition, and that it appeared as if stuck on to the part. The edges of all crusted lesions, except this condition, are attached, but in this affection the attachment is in the center, the edges being free.—*Phila. Polyclinic.*

Palatable Laxatives.—

Oil of cinnamon.....	2 mins.
Oil of coriander.....	2 mins.
Oil of caraway.....	2 mins.
Oil of fennel.....	2 mins.
Oil of orange.....	10 mins.
Oil of anise.....	10 mins.
Tincture of ginger.....	½ fl. oz.
Tincture of podophyllum.....	½ fl. oz.
Water.....	2½ fl. ozs.
Fluid extract of senna.....	12 fl. ozs.
Tartaric acid.....	1 oz.

Dissolve the oils in the tincture of ginger, add tincture of podophyllum, then the fluid extract of senna, and shake well. Finally add the tartaric acid dissolved in the water. Shake frequently for three or four days, allow to stand for one week, and filter. The filtrate should measure one pint; to this add sufficient simple syrup to make four pints.—*Klie.*

Rhubarb.....	1 oz.
Alexandria senna.....	1 oz.
Pumpkin seed.....	½ oz.
Anise seed.....	½ oz.
Wormseed.....	½ oz.
Coriander seed.....	½ oz.
Hydrastis.....	½ oz.
Potassium bicarbonate.....	1 oz.
Sugar.....	32 ozs.
Oil of peppermint.....	10 mins.

Glycerin, alcohol, water, and treacle, of each a sufficient quantity.

Reduce the drugs to a No. 40 powder; moisten with a menstruum of glycerin one part, alcohol two parts, and water three parts; macerate forty-eight hours; pack firmly in percolator and add menstruum until two pints of tincture are obtained. Dissolve in this the potassium bicarbonate, potassium and sodium tartrate, sugar, and oil of peppermint; lastly add enough treacle to make 4½ pints.

Dose: One to two teaspoonfuls for children. This mixture is mild and pleasant to take. The total cost of four and one-half pints is about one dollar, and can be sold in bulk at five cents per fluid ounce.—*Hassebrock, West. Drug.*

ABSTRACTS.

A NEW OPERATION FOR HERNIA.

A. M. PHELPS (*Postgraduate*, 1897, *xii*, 267,) said that relapse in oblique hernia takes place at the internal abdominal ring. The external abdominal ring and the abdominal parietes between the external and the internal rings may be ever so well closed, yet if the internal abdominal ring has not been fortified and well secured, relapse will quite likely occur.

And then again, if the internal abdominal ring has been well fortified and the canal between the external and internal abdominal rings improperly closed, a relapse is almost sure to result. Therefore, our efforts on hernia to prevent relapse should be directed particularly to the internal abdominal ring, for the purpose of as strongly fortifying and adding to the strength of this portion of the inguinal canal as is possible. The total obliteration of the inguinal canal, and lastly, the formation of an artificial inguinal canal for the cord.

It is a fact that the operations for hernia which have been industriously followed by our best surgeons in the past have resulted, in a very large percentage of the cases, in lamentable failures. These failures have been more noticeable in the hernias attended with large openings in the abdominal wall, and they can always be traced to improperly fortifying the internal abdominal ring; failure to obliterate the inguinal canal and change the course of the cord; and in large hernias with large openings in the abdominal wall, the failure to fortify these openings either by properly stitching together the tissues *or introducing between the tissues a foreign body which would become encysted*, thereby adding to the strength of the abdominal walls over the opening.

To carry out these ideas so far as possible and correct the errors that have led to failures, the following methods should be adopted:

A long incision should be made, extending at least two inches beyond the internal ring, through the muscles down to the transversalis fascia. The sac should be opened and the intestine replaced. In the thin sac the suture should be passed with a needle around the neck like the puckering-string of a pouch, and two-thirds of the sac, or little more, cut away, the stump inverted with forceps into the abdominal cavity, and the ligature tightened. This secures the stump within the abdominal cavity, and prevents dimpling of the peritoneum. A single stitch or two across the neck of the sac is now nec-

essary. The muscles should be carefully dissected up from the transversalis fascia, a distance of an inch and a half either way from the internal ring. The internal ring is a hole in the transversalis fascia. This hole is enlarged by the pressure of the intestine. In order to sew up this internal ring, the edges of the fascia should be denuded, and then for half an inch or an inch on either side of the ring two parallel longitudinal incisions should be made (or, in cases where the fascia is thick and adherent to the sac, it can be included with the ligature and inverted with the sac into the abdominal cavity). It will then be easy to bring the fasciæ together over the stump. The fascia should be stitched with interrupted fine wire sutures. Over this fascia should be placed loops of silver wire if the opening is large. The silver wire should be knotted in several places to prevent slipping. Four or five of these loops, two or three inches in length, will suffice. The cord should be raised from the canal and the loops passed underneath the cord from the internal to the external abdominal ring. Over these loops of silver wire or catgut the transversalis muscle is carefully stitched with interrupted sutures, the cord being brought through the muscle direct.



Fig. 1.

The first layer of wire or catgut should run transverse to the inguinal canal. Over the transversalis muscle another layer of wire loops is passed, extending at right angles to the deeper layer between the transversalis fascia and the internal oblique. Each one of these loops of wire is stitched to the muscle to prevent it from slipping. Over this layer of wire the internal oblique is carefully stitched with interrupted sutures. The cord should be brought through the internal oblique muscle. The external oblique is stitched together, and if there is a thick layer of superficial fat of two or more inches, the wound is dressed open; if there is but little adipose tissue, the wound is closed. A small drainage tube or two strands of catgut should be inserted down into the sac when the sac has been inverted into the abdominal cavity; but when the sac has been cut away a few strands of catgut passing to the deeper layers of muscle will suffice for drainage.

Dressings should be performed at the end of the third day. Usually but little tumefaction is seen, and no suppuration.

In the cases of thick, large sacs which have been inverted into the abdominal cavity (the second method of dealing with the sac), and puckered together by means of the silk ligature (see Figs. 11, 12, 13, etc.), it is necessary to introduce a small

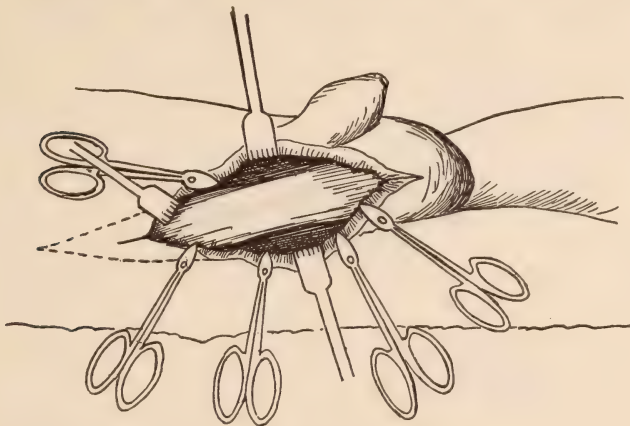


Fig. 2.

drainage tube or strands of catgut to the bottom of the cavity, which drainage tube should be removed at the end of three days. In these cases, the sac should be thoroughly scarified on its peritoneal surface. This will stimulate adhesions to the abdominal peritoneum. In cases where a thick, large sac is drawn up behind the peritoneum (see Figs. 19, 20), by means of a catgut ligature (the third method of dealing with the sac), a drainage tube or strands of catgut should be inserted in this sac for two or three days, and the scarification of

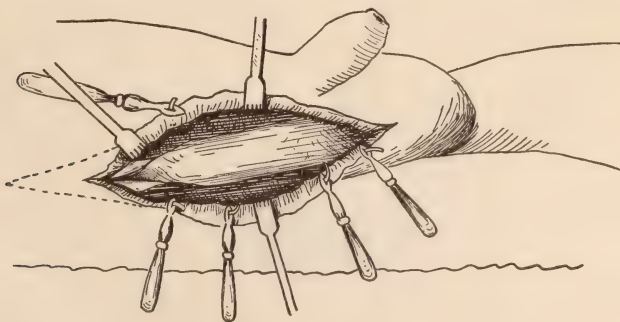


Fig. 3.

the peritoneal surface before the sac is stitched up, and before its introduction into the abdominal cavity, should be very thorough and extensive. Adhesions will then rapidly form between the sac and the abdominal peritoneum. It is very

easy to pass a ligature from within this large sac to the small opening which has been made in the abdominal cavity above. The incision in the sac before its introduction into the abdominal cavity should always be closed by means of catgut sutures.

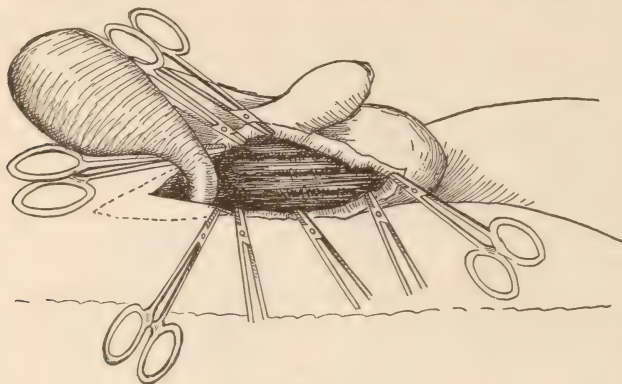


Fig. 4.

The mouth of the sac should be stitched together with one or two interrupted sutures, not sufficient to cut off the circulation of the sac. When the sac is treated in this manner, the wound is treated precisely as has already been described.

He then briefly explained the illustrations.

Fig. 1 shows the position of an oblique inguinal hernia.

Fig. 2, an incision which has been made over this tumor—the sac being in full view. This is the usual incision. The

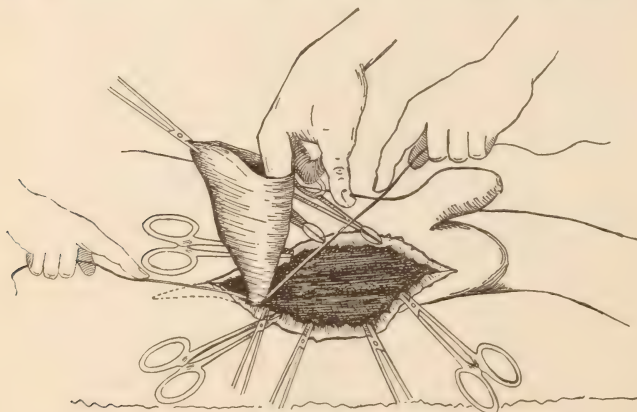


Fig. 5.

dotted lines in Figs. 3, 4, and 5 represent the incision as Phelps makes it.

Fig. 3 shows the canal split up to the internal abdominal ring in the ordinary operation. This incision should be ex-

tended as far as the dotted lines, or nearly to the anterior superior spinous process.

Fig. 4 shows the sac raised from its bed to the internal abdominal ring. Now it can be seen that the incision, if it is extended as far as the dotted lines, will allow the operator plenty of room to perform his work.

Fig. 5 represents the ordinary way of ligating the sac, which he believes to be wrong because it leaves a dimpling of the peritoneum, and it is not an effective way of dealing with the sac. The following procedure should be adopted.

Fig. 6 represents two-thirds of the sac cut away. The edges of it are seized with forceps and the finger is introduced in the sac close to the neck. The ligature, armed with needles, is passed through the sac around the finger, as a string is passed around the mouth of a purse to pucker it. Now with the



Fig. 6.

forceps the sac is inverted into the abdominal cavity as represented in Fig. 7 (*a*, abdominal parietes; *b*, peritoneum). This brings the ends of the ligature within the sac. These ligatures, armed with a needle, are transfixed through the sac, as is shown in Fig. 8, *a*, which brings them externally to the neck of the sac. Now these ligatures are tightened down upon the finger and forceps, and gradually the finger is withdrawn as the ligatures are tightened; this prevents the possibility of ligating the intestine. After the ligature has been tied, a stitch is taken across the stump as is seen in Fig. 9, *d*. This is tied firmly, and the stump will then present the appearance as represented in Fig. 10, the peritoneum being straight and the stump projecting into the peritoneal cavity. The transversalis fascia and abdominal parietes are firmly stitched over the stump. This method of

dealing with the sac is applicable to the thin and moderately thickened variety.

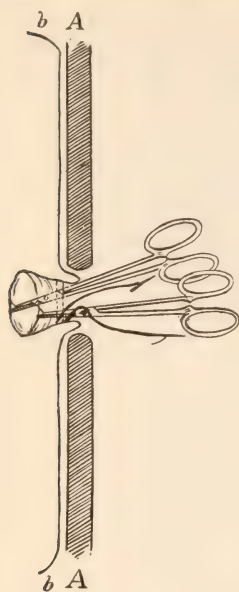


Fig. 7.

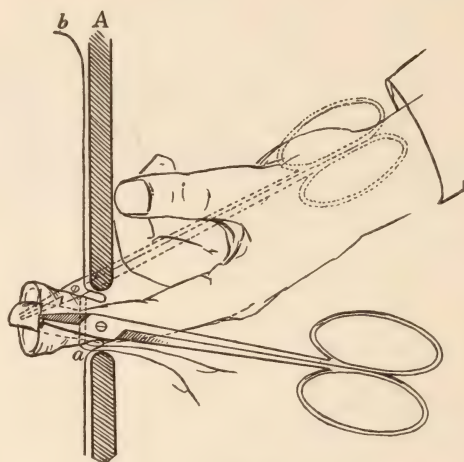


Fig. 8.

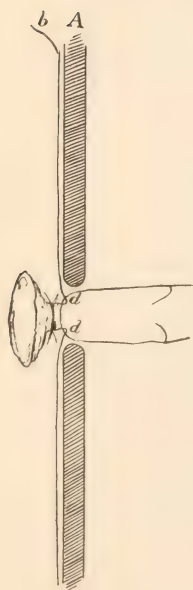


Fig. 9.



Fig. 10.

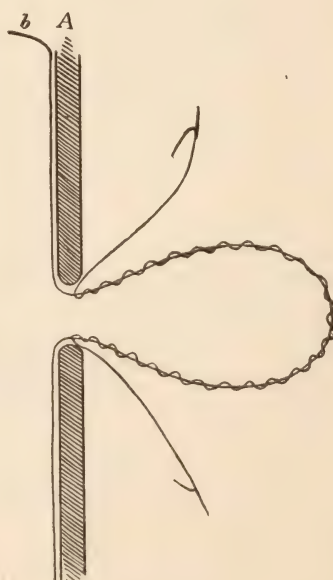


Fig. 11.

The second manner which he has found advantageous in dealing with the sac is represented in Fig. 11. This sac has been opened and the intestine returned to the abdominal cavity, after which the opening is stitched up with catgut. Now a suture armed with needles is passed longitudinally around the sac, threading it in and out like a puckering string. When this ligature is drawn down tightly the sac presents the appearance, as seen in Fig. 12. The sac is inverted into the peritoneal cavity, as illustrated in Fig. 13. This brings the ligatures on the inside of the sac; they are thrust through the sac as in Fig. 14, *d d*, and tightened and tied across the mouth of the sac as shown in Figs. 15 and 16; another suture or two may be put in across the mouth of the sac, when it will

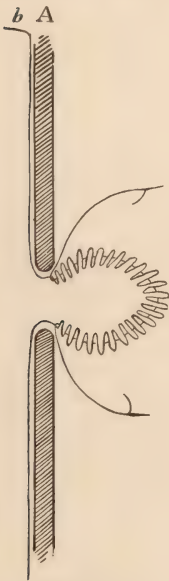


Fig. 12.

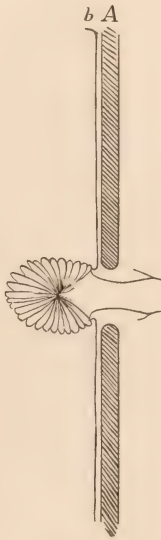


Fig. 13.

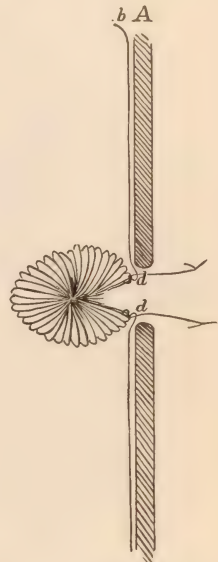


Fig. 14.

present the appearance of Fig. 17. Finally the transversalis fascia is stitched together over the sac which has been inverted into the abdominal cavity, as shown in Fig. 18, and two or three strands of catgut are inserted into the sac for drainage purposes. This manner of dealing with the sacs, is applicable to the moderately thick and large sacs, and the object is to place within the abdominal cavity a considerable mass of tissue over the part of the weakened abdomen. The manner of sewing up the abdominal ring, which is the hole in the transversalis fascia, will be described a little later.

The third way of dealing with the thick, leathery sacs in old hernias is illustrated in Figs. 19 and 20. After the intestines have been returned to the abdominal cavity the

inside of the sac is thoroughly scarified and a catgut ligature is attached to the fundus of the sac (Fig. 19). The opening in the sac which was made to reduce the intestine is now carefully sutured with fine catgut, as in the preceding sac, and upon a probe the end of the ligature is carried upward into the abdominal cavity behind the abdominal parietes as far up as the sac is long. At this point through a small incision, the ligature is drawn out through the opening and the sac inverted into the abdominal cavity and drawn well up behind the abdominal wall. The ligature is attached to a piece of iodoform gauze (see Fig. 20) after being drawn through the small opening. The peritoneal opening is closed with a single stitch and each one of the muscles is carefully stitched

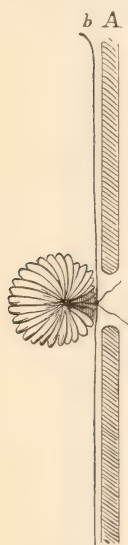


Fig 16.

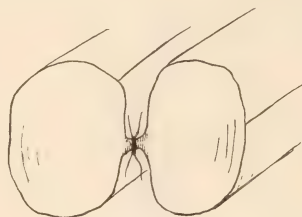


Fig. 15.

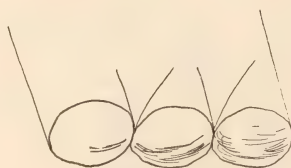


Fig. 17.

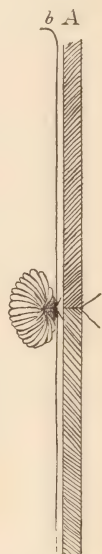


Fig. 18.

together. The second incision in the ordinary individual need not exceed an inch in length on the surface of the body, and at the peritoneum only the size of the probe. This small incision adds nothing to the hazard of the operation. Finally, a stitch is taken through the neck of the sac, as figured in Fig. 20, *b*. Catgut drainage is inserted into the sac. The sac being well scarified before its inversion into the peritoneal cavity, at once adheres to the peritoneum, the omentum and the intestines, the inside of the sac being a raw surface. This forms a large mass of material directly over the weakened point of the abdominal cavity and is a very effective agent in preventing a relapse of hernia.

He thus briefly gave the method of dealing with these

varieties of hernial sacs. In the first the sac is cut away and the pedicle ligated in the abdominal cavity. In the second variety of *moderately thickened large sac* it is inverted into the peritoneal cavity and puckered well down and over the internal abdominal ring. In the third method, *applicable only to the thick, leathery large variety*, the sac is inverted into the abdominal cavity and drawn well up behind the abdominal wall, for the reasons already given.

Now, in regard to the closing of the abdominal parietes after the sac has been treated.

1. The internal abdominal ring must be closed over the stump or inverted with the sac into the abdominal cavity when adherent.

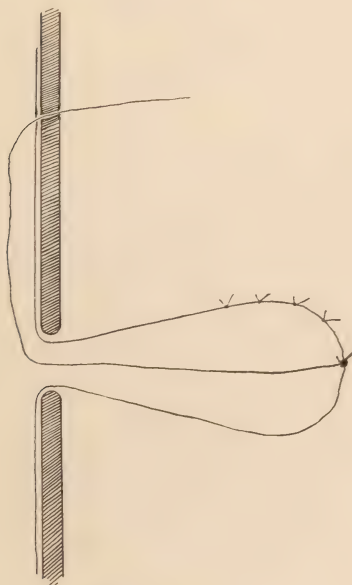


Fig. 19.

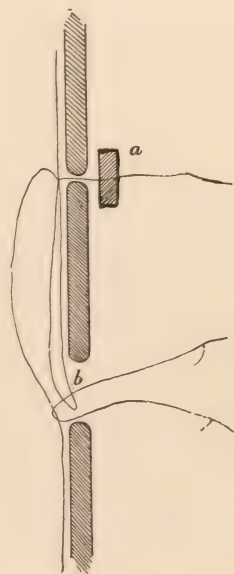


Fig. 20.

2. The inguinal canal must be obliterated.
3. A new canal must be made for the cord.
4. In large openings, silver-wire loops should be adjusted between the layers of muscles crossing the inguinal canal at right angles, which will be described later.

If these steps are taken and the work is effectively done, the relapses seen after operations, will not occur.

1. To close the internal abdominal ring, dissect up the cord from the inguinal canal to the internal abdominal ring. Isolate the transversalis fascia from the peritoneum when not adherent to the sac and the transversalis muscle. Make two longitudinal incisions on either side of the internal abdominal

ring, as seen in Fig. 21 *a*, *b*. The ring, which has been denuded, can easily be stitched together at *c*, the cord through an incision can be transferred to the inferior longitudinal incision. Over the transversalis fascia the transversalis muscle should now be stitched, the cord being brought out directly through the muscle above the line of incision, as seen in Fig. 22. The internal oblique muscle is now carefully stitched together

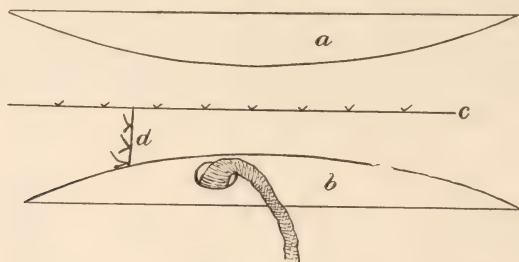


Fig. 21.

and the cord brought directly through the muscle, as seen in Fig. 23. Finally, the external oblique is stitched together, and if the opening is large in the abdominal wall the cord can be brought through the external oblique, and finally the skin and cellular tissue are stitched over the cord. This forms a new canal for the cord between the external oblique and the skin, and one muscle in this arrangement overlaps the opening in the other.

Now, in the large hernias with a large opening in the abdominal cavity, which variety very frequently relapsed from any operation, and in the hernias which have relapsed from other operations, with very large openings in the abdominal walls, place wire between the layers of muscle in the following manner:

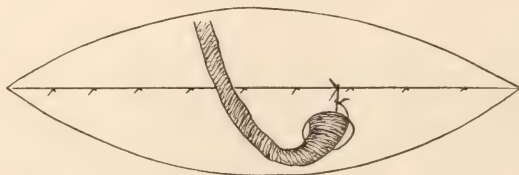


Fig. 22.

After the transversalis fascia has been stitched together over the stump, loops of silver wire are introduced at right angles to the inguinal canal, between the transversalis muscle, as figured in Fig. 24. The transversalis muscle is now stitched over this layer of wire, the cord brought through the muscle, and another layer of silver wire loops is placed between the transversalis muscle and the internal oblique, as illustrated in Fig.

23. This last layer of wire is placed almost at right angles with the first. The internal oblique is now stitched over the wires and the other tissues are stitched together, as has been described. These wire loops are fastened in their place to prevent their slipping during the healing process, with needle sutures. *They are all knotted or run in with loops, to prevent their slipping in the tissues and to more thoroughly facilitate their encysting.* All the stitching done after the ligation of the

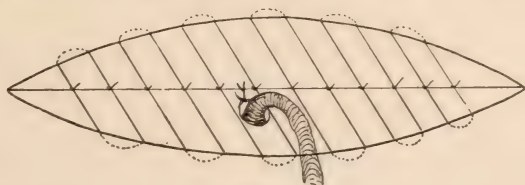


Fig. 23.

sac is with fine wire, with the exception of, perhaps, the superficial sutures and the needle sutures, to hold the wire loops in place. No irritation results from the use of the wire as suggested. When it is introduced into the wound, it comes from an alcohol lamp at a red heat. His conclusions are these:

1. That relapses occurring in hernia are due to the improper way of treating the sac.
2. The use of catgut and other absorbable materials in the closing of the abdominal parities.
3. The improper treatment of the inguinal canal.
4. The dimpling produced in the peritoneum by the ligation of the sac externally.

To remedy the causes of relapsing in hernia:

1. The sac should always be either cut off and ligated within the peritoneal cavity ;

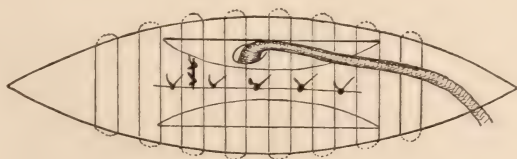


Fig. 24.

2. Puckered together and inverted into the abdominal cavity; or
3. Inverted into the abdominal cavity and drawn up well behind the abdominal wall.
4. The inguinal canal entirely obliterated by being stitched up with fine silver wire.
5. Changing the inguinal canal by bringing the cord out through the different layers of muscles at different points,

thus making one layer of muscles act as a guard against the opening in the layer underneath.

6. In large openings and in relapsed herniæ, the introduction of wire loops is already described. *Strangulation of the sac when treated in this manner never occurs, because the circulation is not interfered with.* When the stump of the sac, however, is ligated in the peritoneal cavity, it unites with the adjacent tissue precisely as the stump does following ovariectomy.

PUBLIC HEALTH.

Ozonometry.—Much uncertainty still attends the detection and estimation of atmospheric ozone, since not only peroxide of hydrogen, but nitrous fumes equally break up the alkaline iodides, liberating the iodine and discoloring the moistened starch. Drs. C. Engler and W. Wild describe in the Proceedings of the German Chemical Society (*Ber. d. deutsch. chem. Ges.*, XXIX., 12) their endeavors to exclude some sources of error. Chromic acid has, they find, the power, alike in solution and in the solid form, of destroying peroxide of hydrogen, however dilute; and in a number of observations, made at the same time and place, the amount of peroxide estimated to be present in the air was practically identical, when determined by titrating the iodine liberated from the potassium iodide before and after exposing the air to action of the chromic acid. A good test for ozone only is manganese chloride, which, besides being far more delicate as a test than the iodide, has the advantage, in virtue of its hygroscopic character, of keeping the paper constantly in a moist state. Ozone turns such paper brown by forming manganese dioxide; though neither hydrogen peroxide nor nitrous acid has any action on it; but since ammonia and ammonium carbonate do the same, the color should be tested by moistening with tr. gaulth. when, if the paper have been exposed to ozone, a blue color will develop even before the brown has had time to appear. No such blue is seen if the browning were caused by ammonia.

Communicability of Foot-and-Mouth Disease.—Many years ago Professor Johne, in *Eulenburg's Handbuch*, laid it down as fully proved that this disease could be communicated to man, and was so, perhaps, more often than was supposed, by drinking the milk of affected cows, though if boiled the milk might be taken with no ill effects. He mentioned the case of two medical men and a veterinary surgeon who, by way of experiment, drank a litre or more of such milk daily, until on the fifth day they were all attacked with eczema of face, hands and feet and general febrile disturbance; he referred, also, to more than one epidemic of what was naturally taken for pneumonia with eczematous eruptions among children, when foot-and-mouth disease prevailed in the district, but which ceased after the boiling of the milk was enforced.

But it is somewhat startling to read in a German veterinary journal that Albrecht failed in numerous attempts to inoculate the disease by rubbing the saliva on the gums, tongues, and cheeks, and the discharge from the vesicles between the toes, of horses, sheep, lambs, kids, dogs, cats and fowls.

Infant Mortality.—The baneful doctrine of Letheby, that “a high birth-rate involves a high death-rate,” is so deeply rooted in the popular mind that Sir B. W. Richardson’s dictum that “the death of a child should be contemplated with horror as something unnatural” was received with general ridicule. But though somewhat of an exaggeration, it embodies a great truth. Infants are frail and tender, easily succumbing to attacks of illness, and affected far more than older individuals by unfavorable circumstances which may be considered as practically unavoidable and inseparable from existing social conditions; but how much is involved in this expression! Social conditions are the dominant factor in infant mortality, the immediate causes of which are improper feeding, exposure to cold and wet, and the spread of infectious diseases. When we reflect that alike among the British peerage and the fisher people of the Faroe Islands the infant mortality, or deaths under one year, is little more than 80 per 1,000 births, we are fully justified in pronouncing any higher rate, or allowing for the actual conditions of the life of the poor in great towns, anything above 100 per 1,000, as preventable; and to quote the words of the Prince of Wales, “if preventable, why not prevented?” Dr. Schlossmann (in the *Ztsch. f. Hyg.*, xxiv., 1) discusses the whole question with special reference to Germany, where, alike in the great towns and the rural districts the rates are, though lower than in Italy and Russia, far higher than in this country. Thus, while the rate in Norway is only 104.9, in England 149.2, and in France 174, it is 212.3 in Prussia, 308.4 in Bavaria, 312.5 in Wurtemberg, and in some towns even higher, as 320 in Strassburg and 350 in Munich. The influence of high temperature is rather favorable to the viability of infants in the first two or three months of life, but the reverse during the remainder of the year, especially about the fifth and sixth, when artificial feeding is more general; and the same holds good of cold and wet, especially in rural districts, as Finkelburg many years ago remarked among the Bavarian peasantry, who take their infants to the fields where they are at work. The higher mortality of illegitimate children almost everywhere has long been a matter of common observation, but that this is entirely due to the neglect entailed by the shame associated with bastardy is no less certain. Indeed, one may safely say that the lower the general standard of morals, the less is the mortality among such children. In some of the provinces of the Argentine Republic, where more children were born out of than in wedlock, and where naturally no disgrace attached to illegitimacy, we noticed some years ago that the difference did not exist; and, as Schlossmann states, the

proportions are actually reversed in Vienna, where the death-rate of the legitimate is 226, and of the illegitimate 156, whereas in Berlin the numbers are 230 and 420 per 1,000 births.—*Practitioner*.

TUBERCULOSIS OF THE TONSILS IN CHILDREN.

SCHLESINGER (*Fortschritt der Medicin*, 1897, xv, 35).—Up to the present time the parallelism between advanced tuberculosis of the lungs and tuberculosis of the tonsils, as also that between mild or passed tuberculous processes of the lungs, with the escape of the tonsils, has only been demonstrated in the case of adults, but has not been observed in children. Schlesinger was able to confirm this parallelism also in children, having found twelve cases of tuberculosis of the tonsils in thirteen of florid tuberculosis of the lungs. The diagnosis of tonsilar tuberculosis is hardly possible microscopically, for the reason that tubercular ulcerations are only found with exceeding rarity on their surface, neither were the tonsils hypertrophied without exception, but were found pale and firm in nearly two-thirds of the cases. In nine cases examined for the purpose the tonsils were found to be affected bilaterally, although not with equal intensity. As to the relation between tuberculosis of the lymphatic glands of the neck and that of the tonsils, in nine cases the author found that the tonsils were healthy in two. He inclines, therefore, to the view that a primary tonsilar tuberculosis is not to be taken for granted in all cases, but we must take into account the possibility of their infection by cheesy cervical glands by means of the return flow of lymph. The author finds some support for this view from the fact that in these cases the recent tubercles are situated at the base of the tonsils, away from their crypts.

CLINICAL AND EXPERIMENTAL STUDIES OF THE INFLUENCE OF BEHRING'S DIPHTHERIA-ANTITOXIN ON THE HEALTHY AND THE DISEASED KIDNEY.

SIEGERT (*Arch. f. pathol. Anatomie*, 1806, cxlvi, 331), from clinical and experimental studies, arrives at the following interesting conclusions:

1. As a sequel to the subcutaneous injection of Behring's diphtheria-antitoxin, we frequently meet with a slight temporary albuminuria and albumosuria in patients treated with the serum, both for therapeutic and for immunizing purposes. This condition need not be considered a serious disease of the kidneys.

2. A like form of albuminuria and albumosuria, accompanied by a diminution of the quantity of urine and an increase of its specific gravity, is met with in experiments on animals.

3. This albuminuria is due to the serum itself, and not to the amount of carbolic acid present in the former. The latter

does not cause albuminuria, but, on the contrary, has a slightly diuretic action.

4. Of severe changes in the kidneys, as an immediate sequel of the serum injection, there has been observed acute parenchymatous and hemorrhagic nephritis. It has, however, not yet been demonstrated that these stand in any relation to an unchanged Behring's diphtheria-antitoxin.

5. Cases of anuria, which have been observed at the bedside, occur also occasionally in experiments on animals.

6. A pre-existing albuminuria in patients suffering with diphtheria, runs, as a rule, a benign and rapid course after the exhibition of a serum injection.

7. It is not possible to produce an anatomical lesion of the kidney in the rabbit by the subcutaneous injection of 10 ccm. of Behring's serum.

8. Relatively small quantities of serum do not influence diuresis in experiments on animals, and are to be preferably used for that reason at the bedside. Hence the demand for a concentrated serum, which has now been furnished.

9. Should Behring's diphtheria-antitoxin prove a specific against diphtheria, its after-effects on the functions of the kidney, which are usually insignificant, ought not to be sufficient ground for its abandonment.

THE THERAPY OF CREOSOTE IN CHILDHOOD.

AUGUST HOCK (*Die Therapie der Gegenwart*, 1897, xxxviii, 155) says that the administration of creosote in children finds an extensive field, aside from marked disease of the lungs. It is of value in the after-treatment of the catarrhs so frequently following whooping-cough and measles, which frequently are forerunners or the first indications of a tuberculosis infection. We have nothing to fall back on in these cases besides the hydiatic treatment, except that by creosote, which frequently produces good results. The usual effect of creosote is manifested in an increase of appetite, the disappearance of pain in the abdomen, and an increase in bodily weight. The condition of the lung is improved much later. The condition *sine qua non* in the administration of creosote is to avoid disturbance of the digestive tract. Administered in small doses, and with meals, creosote is undoubtedly a good stomachic, and cannot produce any harmful after-effects. The case becomes different, however, when large doses of creosote are given in concentrated doses. In that case, of course, the damage inflicted may be greater than any benefit obtained. Hock seldom prescribed pills, as children do not take them well. The administration with tincture of gentian, in drop doses, also had to be frequently discontinued on account of the appearance of symptoms of intolerance. He, as a general rule, made use of a solution of creosote in cod-liver oil, and found that it was rarely necessary to use a stronger solution

than one per cent. Solutions of one and a half per cent. were usually borne by older children, a two or three per cent. solution only in exceptional cases. The following formula was generally employed: R. Creosote, 1.0; Ol. Jecor. Aselli, 100.0; Saccharini, 0.05.

Mix. Sig.—Two coffeespoonfuls, up to three tablespoonfuls, three times daily (0.1-0.4 grm.).

The dose of 0.1 proved to be perfectly sufficient for infants and for children a little over one year of age. When anorexia or disgust for the medicine appeared, it was discontinued for a time. Fever was not controlled by creosote, but was treated with quinine, which gave better results than antipyrin, and creosote was only given in the afebrile stage. *Kreosotal* was substituted for creosote in nearly all cases which came under treatment since the last of July to the middle of October, while creosote was continued in all previous cases. *Kreosotal* is insoluble in the stomach, and its odor and taste are less intense, although still unpleasant. Eructation does not occur from it, as is the rule with pure creosote. *Kreosotal* is only split up after it reaches the intestines and is absorbed in the form of creosote. According to Eschle's experiments this goes on very slowly, so that where large doses have been administered much of the preparation is passed unchanged. He also gives this in solution in cod-liver oil: R. *Kreosotal*, 3.0-5.0; Ol. Jecoris Asell., 100.0; Saccharini, 0.05. In older children who manifested a disgust for cod-liver oil, an alcoholic solution was ordered, or the pure preparation was emulsified with sugar and water, and given in drop doses. *Kreosotal* does not irritate even when given in a solution stronger than one per cent., nor was it ever refused by smaller children, as was the case now and then with the solution of creosote in cod-liver oil.

Hock has treated twenty-eight children from the ages of nine months to eleven years by creosote carbonate. All these cases were affected with marked disease of the lungs, accompanied by bronchial or at least indistinct breathing in one or both apices of the lung. Six patients presented pretty high temperatures in the beginning of treatment. The dose for children under one year was 0.15-0.5, increasing from coffeespoonful doses of a three per cent. solution in cod-liver oil to two coffeespoonfuls of a five per cent. solution; for older children, 0.5-1.5 grm. in 24 hours. The patients were under continuous treatment three to six weeks, and were generally seen occasionally afterwards. A number of glandular tumors were also treated with *kreosotal* cod-liver oil and rapidly improved. Two cases of peritonitis also rapidly improved under this treatment. In a child nine months old, who had an infiltration following whooping cough, a perfect recovery was effected by the use of creosote carbonate for six weeks, in doses of 0.5 grm. a day. Hock's opinion is that *kreosotal* possesses the same action as non-carbonated creosote, with the advantage of permitting the administration of larger doses without dis-

turbing the intestines or the stomach. Hock also employed the pure guaiacol carbonate in a series of cases, giving the powder to older children in wafers 1.5 to 2 grm. a day. Its action also is quite satisfactory, but it cannot be said that it is more rapid, in spite of the relatively large doses used. The action of creosote has not yet been discovered. It is impossible to obtain such a saturation of the fluids of the tissues with creosote that the tubercle bacilli are prevented from growing. It is not, however, so much the local growth of the bacilli which causes the severity of the general symptoms, as it is the absorption of poisonous products of metabolism; as to these toxines, they are not only caused by the tubercle bacilli, but a great number of other micro-organisms are also concerned. Creosote being exhaled from the lungs also acts directly, disinfecting to its surrounding surface, and thus limits a source of autoinfection; an analogous action is also produced by it in the intestines. Aside from this disinfecting power creosote also seems to act directly, stimulating the cells, and promoting in this manner the neutralization of the poison. In the administration of creosote we do not wish to produce a local irritation, but rather a slow and continuous action of the absorbed remedy in the body, and this may be obtained as well if not better by administering the carbonate (kreosotal) than by giving the pure creosote. As the carbonate is not decomposed in the stomach, however, we will have to administer pure creosote where we wish to act on the stomach directly. It must, however, be given in small doses. In the treatment of tuberculosis and scrofulosis the carbonate is to be preferred. Another advantage is that it may be given in much larger doses, although it is unnecessary to give more than .05 to .08 grm. to the klgrm. of bodily weight. It is desirable to begin with small doses and then rapidly increase them. Neither of these remedies should be administered while there is high fever, but rather during the afebrile stage, a slight evening temperature being no contraindication to their exhibition. Guaiacol carbonate, which is altogether tasteless, may be given to very young children in milk, to older ones in a little wine.

ON CONTRACTED KIDNEY IN CHILDHOOD.

L. BERNHARD (*Berlin Klin. Wochenschr.*, 1897, xxxiv, 191) after a lengthy discussion on the pathological anatomy of the contracted kidney in childhood, reported the following cases: A boy, fourteen years of age, suffering from pulmonary phthisis, voided urine containing albumin and cylindrical and epithelial casts. At the autopsy the right kidney was found to be typically contracted (microscopic examination: concentric connective tissue formation around the destroyed glomeruli), and the left kidney was in the beginning of the same process.

In a boy, three years of age, who had died from measles, a contracted kidney of one side was accidentally discovered.

In a case which was only observed clinically the diagnosis of contracted kidney with amyloid degeneration was made. He was a seven-year-old boy and presented marked symptoms of congenital syphilis. There was no cardiac hypertrophy present. Contracted kidney in the child does not differ greatly from that of the adult. The first indications often are polyuria, polydipsia, enuresis, etc.; frequently, however, they are very vague. Cardiac hypertrophy is frequently met with. As etiological factors, only syphilis and atheroma of the blood vessels are to be considered.

He also reported a number of cases of chronic acyclical albuminuria without any marked disturbance of the general health, as a sequel of scarlet fever, which seemingly ended in contracted kidneys.

Furbringer has recently found typical contracted kidneys in two young children, sister and brother. Granular atrophy is frequently met with, beginning occasionally at an early age. The etiology is unknown. Cases of unilateral contracted kidneys are to be sharply defined from the former, and are nearly always to be traced to stone in the kidney.

Strauss said that there is also a cyclical albuminuria, which might be made use of for the diagnosis of contracted kidney; this may develop, for example, a number of years after the occurrence of an infectious disease of childhood, and is recognized by the presence in the urinary sediment of a greater number of hyaline and granular cylinders than usual. The general health is little affected. The morning urine should be examined preferably, as that passed during the night may be absolutely free from albumin. Symptoms of cyclical albuminuria are occasionally met with during the improving stage of a scarlatinal nephritis.

Litten said that the urine of adults suffering with contracted kidneys is frequently free from albumin, while that passed during the morning hours may contain albumin.

Bernhard said that unilateral contracted kidney may also be present where there is no stone. The last cases reported by him were not cases of cyclical albuminuria.

CLINICAL FORMS OF DIPHTHERIA AND DIPHTHERITIC ANGINAS.

O. VIERORDT (*Berl. Klin. Wochensch.*, 1897, *xxxiv*, 153) said that the bacillus of diphtheria is found not only in membranous anginas, as is well known, but also in other varieties. In a certain percentage of these cases, under circumstances which admit of no doubt as to the role it plays as the excitor of this form of angina, it is for us to determine whether or not these non-membranous bacillary anginas are of great consequence, and how they may be differentiated from the benign forms. On the other hand, there exist besides the diphtheroid of scarlet-fever other forms of anginas which resemble diphtheria, but which are not due to the

specific bacilli and therefore are benign. He restricted his communication to those non-membranous anginas, caused by the Loeffler bacillus, and further to those forms of angina which have a diphtheroid appearance but in which the Loeffler bacillus is absent.

I. AFFECTIONS OF THE PHARYNX DUE TO BACILLI.—The findings in cases of undoubted membranous anginas, with the formation of a true membrane, extending over the border of the tonsil, will not be here considered. These forms only occasionally make the diagnosis difficult, in cases of scarlatinal diphtheroid deposits.

Purely tonsillar membranous diphtheria, with the presence of bacilli, was found in the majority of cases, either as one large, firmly adhering, whitish deposit, covering the whole surface of the tonsil, or as small, separate islet-like spots, which were wholly or in part situated on the prominent portion of the tonsil, presented a grayish-white color, and adhered either pretty firmly or perhaps somewhat loosely to the tonsillar tissue. On removal, or on the spontaneous shedding of such an insular deposit, a true whitish or yellowish lacunar plug not at all infrequently made its appearance. After the shedding of confluent deposits, which covered the whole surface of the tonsil, lacunar plugs also frequently presented, which were often of a yellowish-white color, in contradistinction to that of the removed deposit. After the removal of firmly adherent deposits the mucous membrane was found slightly bleeding, but not ulcerated.

Typical lacunar angina, i. e., angina of the tonsils, accompanied by a yellowish or yellowish-white conglomeration, having its seat deep down in the lacunæ, being easily expressed or drawn out and of a soft consistence, have not infrequently been met, accompanied by bacilli. All those cases are excluded in which lacunar plugs were present only as secondary deposits in well-marked diphtheria. At the same time, also, those cases of lacunar anginas with bacilli present were excluded in which the latter might possibly be pseudo-diphtheritic bacilli, namely, non-virulent Loeffler bacilli. There yet remained eight cases of perfectly typical lacunar anginas, caused by the Loeffler diphtheria bacillus. From these cases the conclusion was drawn that, not only in the beginning of a bacillary angina, but during its course as well, a typical lacunar tonsilitis may be present. It was impossible to distinguish these from the innocent affection frequently met with, either by the color or seat or consistence, nor even by the more or less firm adherence of the plugs. This picture was usually present in the beginning of the disease, for one to three days, and was then followed by a well-marked membranous diphtheritic deposit. Occasionally, however, it also occurred after the membrane had been shed. From two of the cases observed it was seen that *a bacillary lacunar angina may remain purely lacunar during its whole course*.

Rarer Cases of Bacillary Diphtheria.—He has frequently observed lacunar props on tonsils slightly enlarged, from which were propagated, on the surface of the tonsil, globular lentil-sized, typical adherent diphtheritic membranes, like the flat heads of nails, reminding one of nail-cultures; this similarity became more apparent when this membrane, resembling the head of a nail, was removed by the pincers. Bacillary diphtheria, furthermore, occasionally begins when the tonsils are not yet swollen at their uppermost or lowest portion; in both cases the small portion of membrane lies quite deeply, even hidden. Finally we may meet, in the anginas accompanying croup, with a hardly recognizable white, veil-like membrane.

Lastly, that form of angina which by some is designated as necrotic tonsilitis, and which frequently occurs unilaterally, may possibly be due to bacillary infection.

II. DIPHTHEROID WITH ABSENCE OF BACILLI.—About fifteen cases of a diphtheritic character without the growth of bacilli, leaving out scarlet fever, were observed. None of these extended to the nose or larynx, but the greater number passed beyond the tonsils in the direction of the soft palate or pharynx. Paralysis was never a sequel. Streptococci and staphylococci were found in some cases, and in one case a diplococcus. Among these forms the *recurrent diphtheroid angina, with the absence of bacilli*, was of particular diagnostic interest. There are persons, adults as well as children, who are subject to an annual attack of "sore-throat." Frequently these recurrent anginas take on the marked character of diphtheria, usually confined to the tonsils. In three cases, an exact bacteriological observation was made, and the absence of the bacillus of diphtheria demonstrated. It may be that we are dealing here, in an anatomical sense, with croup (Diphtheritis superficialis).

III. NECROTIC ANGINAS WITH THE PRESENCE OF STAPHYLOCOCCI.—The staphylococcus pyogenes was frequently found accompanying the Loeffler bacilli or the streptococci.

PERITYPHLITIS IN CHILDREN.

KAREWSKI (*Berl. Klin. Wochensch.*, 1897, *xxxiv*, 150). An early operation will yield the best general results. Those cases in which a perforation of the vermiform appendix gives rise to an acute septicemia are to be considered the gravest and most hopeless. Death usually follows within a few hours. The author describes such a case from his own observation. Perityphlitis is frequently mistaken in its beginning for some other disease, sometimes it is erroneously diagnosed a dyspepsia, etc. At other times it may take on a bad course in consequence of improper treatment, for example after high injections and purgatives, which are at times administered at too early a period following an opium treatment. Sometimes we may find important symptoms absent in the disease picture of perityphlitis, as, for example, vomit-

ing. In children even the most desperate cases may recover, and an operation may be successful when all hope seems gone. An operation is, therefore, justifiable even in diffuse peritonitis, in spite of the grave prognosis of the latter. We should be prepared to operate in perityphlitis at a moment's notice, on account of the danger of perforation and extension of the purulent matter. Perforation into the rectum is also accompanied by danger from the liability of a reflux of feces, so also perforation into the bladder. Some cases seemingly progressing favorably suddenly become worse and have a lethal ending, or lead to invalidism, because retained portions of pus lead to progressive diseases, far removed from the original focus, or because specific excitors of disease, tuberculosis and actinomycosis have remained behind in the original site. The author cited a number of cases observed by him, illustrating these two varieties of perityphlitis. A number of cases of tuberculous peritonitis are to be referred to the vermiform appendix. An operation neglected at the proper time may, therefore, come to an unfavorable end even a long time afterwards. The operative measures to be pursued are the same in children as in adults. The site of the incision should be chosen according to the location of the abscess. In most cases Sonnenburg's incision will be found the best to employ. The cleansing of the abdominal cavity should be confined to the smallest possible proportion. Irrigation scatters the germs. Resection of the omentum, as proposed by Baginsky, is altogether unjustifiable, is never of any use, and is generally dangerous to life. Removal of the appendix is to be recommended when it lies within the field of vision; it is dangerous, however, when it has to be searched for among the adhering intestinal coils. Its resection may prevent relapses, which happen in children as well as in adults. Puncture of the abscess for diagnostic as well as for therapeutic purposes is to be decried, being unnecessary for the former and inadequate for the latter purpose. Puncture may easily result in a perforation of the intestine. It is important never to make the incision on the puncture needle. An early diagnosis is the great desideratum. In some instances an examination per rectum will become necessary, through which a resisting body may be occasionally felt with certainty in the ileocecal region. The first symptoms of a perityphlitis are occasionally purely dyspeptic, in others they are referred to the bladder. A sudden onset of pain in the abdomen, with intestinal symptoms, should always lead us to suspect a serious affection. All forms of clysters and purgatives are to be excluded until such a time when a perityphlitis and peritonitis may be excluded. The operation should not be performed too early, but early enough. Conservative treatment should be discontinued when it is found that the exudate does not decrease, the fever does not diminish, and symptoms of irritation do not disappear, but rather increase. It is better to operate once unnecessarily than once too late. The dangers of a neglected operation

are exceedingly great, in comparison with a hasty one. When a diffuse peritonitis makes its appearance, we may sometimes await the passing off of the shock before operating.

A CASE OF POISONING WITH BROMOFORM.

REMBE (*Der Kinderarzt*, 1897, viii, 49) Ritter has again warmly recommended bromoform in whooping-cough. During the discussion Sonnenberg cited fourteen cases of poisoning, compiled by Boerger, and sounded a note of warning in the use of the remedy. Lange, of Leipzig, also reported a case of death from poisoning by bromoform, during the discussion, in which the victim was an older child, who had taken the ordinary dose. Therefore: *cavete bromoform!* It is better to make use of antipyrin or tussol in whooping-cough, which drugs influence the latter quite as well as bromoform, and are relatively without danger in children. Sonnenberg has, up to the present time, not met with any bad results which could be laid to the use of antipyrin. Rembe then reported the following case from his own practice, to show how timely this warning is, for in his case a dose which was smaller than that advocated by most authors, had produced well-marked symptoms of poisoning. The following is a condensed history of the case:

A. H. —, a sturdy boy seven years of age, contracted whooping-cough in the spring of last year, and was treated with antipyrin. The paroxysms under this treatment barely reached six during the night. Although he was satisfied with the course of the disease, he allowed the parents of the boy, who had heard of bromoform from the grandparents, to influence him in prescribing bromoform, although he had not obtained favorable results in a previous use of the remedy. Five drops were ordered to be given the patient three times daily. After about one week's use of the drug he was called at midnight, with the report that the boy could not be brought to consciousness. It was said that the nurse-girl had administered the drops in the evening; the mother, not knowing of this, had given six to eight drops more on going to bed. As the child did not have his paroxysm of cough as usual, the parents tried to awaken him, and, finding they were unsuccessful, called on Dr. Rembe. The child lay as though in a state of coma and could not be aroused by any form of irritation. All his limbs were in such a relaxed condition that he could not be made to stand, neither could he be made to swallow. Pinching and shaking were unable to rouse him; the respiration and pulse were, however, both normal. As there was no change for the worse, after a time he ordered the parents to administer some coffee with brandy from time to time when the patient should swallow. On the next morning the boy was again perfectly well, except slight drowsiness. There had been no paroxysm of whooping-cough during the night. The boy gave Dr. Rembe the impression, when he first

saw him, of one deeply chloroformed, and, as it is probable that chloroform is released in the system from bromoform, we have the key of its good as well as of its evil properties. At all events this case again teaches us to be very careful in the use of this remedy. The dose which had been administered to this boy during the evening did not exceed in all probability fifteen drops.

A NEW DISEASE OF CHILDHOOD.

JOHANNSEN and BOECK (*Aerztliche Rundschau*, 1897, vii, 133) have observed, independently of each other, according to the *Norsk. Magaz. f. Laegevid.*, a number of cases, of which the following is a description. The children were of the age of one and a half years. First a few vesicles, which were hardly noticed by the children's relatives, formed on the anus and the genitals. These burst and left open sores. Following this vesicles also made their appearance on the hands and feet. The latter took on a bluish-red discoloration, and finally became thickly covered with large and small sized bullæ. These were also found symmetrically distributed on the knees in less numbers. The children became extremely restless and cross. They also had a look of peculiar wildness and unrest. Speech was totally abolished, as well as the power of locomotion. The eruption was accompanied by violent itching. During the following weeks these bullæ made their appearance at intervals, some healing while others were converted into weeping spots. After eight weeks no further eruption took place, but the parts on which the bullæ were situated, particularly the hands and feet, have a blueish and swollen appearance, and are firm and hard to the touch. The nails of the toes are white, and split in fibers. Speech did not return during the whole time of observation. Treatment consisted in soothing and protecting applications, also in the administration of wine of iron and quinine, with bromide of potassium at night for the restlessness. This interesting combination of an affection of the skin with disturbed function of the central nervous system occurring at a certain age has not been described as yet. It may be possible that we have to deal with processes of ossification at the base of the cranium, like those described by Virchow some time ago in cretinism.

THE ADENOID HABIT.

VICTOR LANGE writes on the "adenoid habit" in *Ugeskr. f. Læger*, January 1, 1897: It is well known that the adenoid habit, so called by Wilhelm Meyer, is not absolutely pathognomonic for adenoid vegetations in the naso-pharyngeal space. Just as we occasionally find patients who do not present this habit, in spite of the presence of these vegetations, there are also cases in which the number of growths present bear no relation at all to the characteristic aspect of the patient. We must distinguish two

groups of the latter. First, such in which we believe that we are dealing with a typical case of the disease described by Meyer, for the reason that we find the habitus, the presence of adenoid vegetations, and some other symptoms. After having operated on the patient, and awaited the reaction, we find to our astonishment, that although in regard to respiration and speech, improvement has perhaps occurred, the characteristic aspect of the patient is unchanged. This condition also remains so in future while in typical cases within a month—and occasionally immediately following the operation—all of the symptoms have disappeared. The second group, which is smaller, consists of cases which present a typical adenoid habitus and a few other adenoid symptoms, and yet do not show nor ever had a particle of hypertrophy in the naso-pharyngeal cavity. On closer investigation we are frequently told by the relations of the patient that the child is lacrymose, and unsocial, with adults as well as with children of its own age, easily becomes angry, is indolent in its study, and slow in its development, etc., so that the question involuntarily arises, whether these children are perfectly normal. On account of the difficulty with which they associate with others they are frequently at the time of their development sent to some educational institution. The author looks upon these children as neuropathic, but has occasionally also found some defective development of the frontal portion of the skull. As regards the cause of the adenoid habitus we only know that respiration is made difficult by the more or less fulness of the naso-pharyngeal space, the patients being forced to breathe through the mouth, and that also the naso-pharyngeal space does not act as a sounding board in speaking, and speech takes on a peculiar sound. The growths also keep up a chronic catarrh and easily change their volume, through which may be explained their bad influence on the Eustachian tubes and the middle ear. These symptoms, which are based on purely mechanical grounds, disappear after the operation. Besides this there are also present a number of other symptoms, for example headache, lassitude, slow intellect, a bad temper, etc. In explaining these latter symptoms, the author is supported by the discovery made more than twenty-five years ago by Key and Retzius, that there exist communications between the subdural and subarachnoidal spaces of the brain and spinal cord on the one hand, and the lymphatic system of the nose on the other hand. From the studies of the pharyngeal tonsil and the adenoid tissues of the naso-pharyngeal space by Waldeyer, we know furthermore that the latter play an important part in the "Waldeyer ring" so-called, and in the lymphatic construction of this whole region. The supposition therefore that whenever the nose is somehow obstructed—for example, from an unusually severe catarrh—the symptoms mentioned above may arise, because the circulation is arrested, fluid accumulates in the brain, exerting pressure on the latter; to this perhaps may also be added,

incomplete oxidation due to obstructed nasal respiration. By removing hypertrophied adenoid tissue from the naso-pharyngeal space, a similar obstruction would be removed, causing the symptoms to disappear.

To the children with an adenoid habitus mentioned above, but in whom vegetations were absent, this explanation does not apply, as we have no mechanical obstruction in these cases. The author considers these patients as in part congenitally degenerated. The abnormal condition of their nervous system is also emphasized, by the neurasthenia which is always present; we find these individuals always to be shy of work, easily tired, and of a whining, unsociable disposition. The surprising results obtained by arsenic in these cases also speaks for an affection of the nervous system. The main point is, however, the manner of their education. These children should be kindly treated. They should never be forced to anything, and their peculiarities should be borne with. An institution is the best place for these patients.

LOCALIZED ERUPTION IN SCARLET FEVER.

In the meeting of the "Soc. mèd. des hôp." of March 29, Dr. LEMOINE spoke of a localized eruption in scarlet fever. Besides true scarlatinal angina, which is now universally recognized, he observed in the military hospital of Val-de-Grâce in 1895, a number of cases which in a manner form a transition between this and the typical eruption of scarlet fever, and in which the eruption is only found in the face. This form, although mentioned before in 1840, by Braun, but again lost sight of, is of importance for the reason that it may go unrecognized, and be the cause of further infection. We have to deal in these cases with individuals who are suddenly attacked with angina, accompanied by pretty high fever (39° , 40° , even 41° C.); the face at the same time takes on a uniform redness, and becomes edematous; there is no eruption on other parts of the body. Usually this redness of the face remains stationary for two or three days, although the fever may be lowered, or have altogether disappeared; but it sometimes disappears also with the latter; a few days later desquamation, beginning at the nose and involving the whole face, makes its appearance. It does not peel off in large pieces, but in the form of branny scales. This circumscribed scarlet rash appeared among nearly 200 patients in thirty-two, and in twenty-three no sign of any desquamation was present. He answers the objection that an infectious erythema of the face may occur also in the usual course of an angina by stating that he waited a year before publishing his cases; in the mean time he has treated ninety-three cases of various forms of angina (simple, phlegmonous and pseudomembranous) in the absence of any scarlet fever epidemic, of which only six presented a facial erythema.

THE RELATION OF THE BLOOD-SERUM OF HEALTHY
CHILDREN AND THOSE SUFFERING WITH DIPH-
THERIA TO DIPHTHERIA ANTITOXIN.

J. Loos (*Jahrl. f. Kinderheilk.*, 1896, *xliii*, 360) wished to demonstrate whether the blood-serum of children took on antitoxic properties by the injection of diphtheria antitoxin, or from inoculation with diphtheria. For this purpose he took 15 to 20 ccm. of blood by venesection from children, separated the serum, mixed this with diphtheria antitoxin, and injected the mixture subcutaneously into the abdominal region of animals. The injection of a large quantity of antitoxin has the power to increase the antitoxic properties of human blood. It has not yet been possible to determine how long such a change will last. On injecting smaller quantities, namely so-called prophylactic injections of antitoxin, no change in the antitoxic power of the blood-serum could be determined. A natural recovery from diphtheria is accompanied also in the human being by an increase (perhaps, the formation) of antitoxic substances in the blood-serum; a long time, however, elapses after recovery from diphtheria before this changed condition can positively be verified. There seems, however, to exist an undeniable connection between the possibility of infection, the gravity of the infection, its course, and between the antitoxic properties of the blood-serum, which are naturally present. The natural antitoxic properties of the blood-serum are very likely more permanent, they are at least not changed in a short period. Whether this will also hold good for the blood artificially changed through the addition of antitoxin is yet to be demonstrated.



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ORIGINAL ARTICLES.

ACUTE ARTHRITIS AND EPIPHYSITIS OF INFANTS AND YOUNG CHILDREN.*

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Children.

MY attention has recently been redirected to the subject of acute arthritis of infants by one of those curious runs of cases which sometimes occur. Since October last I have had no less than five cases under my care.

This affection is most frequent and most typical in infants under a year old, but practically the same condition is observed in much older children. In the latter an epiphysitis is less likely to cause suppuration of the joint; or if it does so, this occurs later.

The following case may serve as a clinical picture of acute arthritis: Sarah R., aged ten months, was admitted with the right knee much swollen, flexed to a right angle, and with deep fluctuation, evidently due to fluid in the joint. The skin over it was hot, edematous but not red. Temperature 102°. The parents had noticed a slight swelling of the knee for two weeks. After ascertaining by aspiration that the fluid within the joint was pus, I opened the joint freely by a transverse incision through the middle of the patella. The articular surfaces appeared perfectly healthy. With a bent probe I then searched all around the bones at the level of the epiphysial disk or line, and just within the reflection of the capsule, for a sinus or patch of softened bone. Ultimately

*Read at the Thames Valley Branch of the British Medical Association.

my probe entered a small opening leading down to a patch of osteo-myelitis on the posterior surface of the femur. This was gouged out and scraped. The result in this case was excellent, and will be referred to under the heading of treatment.

Case 2.—A second case, William R., aged six months, was admitted the same week. The pus had burst through the upper reflection of the synovial membrane in front and tracked up under the quadriceps femoris as high as the groin. In this case also the articular surfaces appeared healthy, and it was only after a careful search that a patch of osteo-myelitis was found in the upper end of the tibia, on its posterior surface and about the level of the epiphysial disk.

The symptoms may be more acute than in the above cases, the disease proving fatal in three or four days.

In my experience the knee is more often affected than any other joint; the hip joint next in frequency, although by some it is placed first; then the shoulders. Not infrequently more than one joint is involved. For example, the case first quoted above went out well, but returned soon afterwards with epiphysitis near one ankle.

The primary lesion is an osteo-myelitis, situated in the growing bone at the extremity of the diaphysis and in close proximity to the epiphysial disk. Hence separation of the epiphysis from the shaft is not infrequent (see Figs. 1 and 2), especially when the head of the femur is involved. The epiphysis of the head is then found loose in the joint. Whatever joint is affected the osseous nucleus of the epiphysis itself is rarely involved in the original lesion. The inflammation of the bone is set up by pyogenic micro-organisms floating in the circulation, which find a nidus suitable for their development in the unstable tissue of the growing bone. They are probably deposited in the newly formed vessels by a process of thrombosis or embolism. A condition of diminished local resistance may have been determined by a blow or sprain or by exposure to cold. Such lesions not infrequently occur after one of the exanthemata. A scarlet fever, measles, typhoid fever or diphtheria lowers the general resisting power of the tissues; and the ulcerative and catarrhal affections associated with them open the door to micro-organisms, which are disseminated by the circulation. Cases of arthritis following the

acute fevers are sometimes spoken of as scarlatinal, typhoid or variolar.

The primary osteo-myelitis frequently gives rise in infants to an *abscess* occupying the epiphysial line. This usually opens near the margin of the articular cartilage, but in rare instances perforates the cartilage near the center of the articular surface. Sir T. Smith, in his original article on acute arthritis of infants figures an example of this condition (Fig. 5), Saint Bartholomew's Hospital Reports, vol. x, 1874. In other instances, after death nothing is found except a patch of hyperemic, softened, and infiltrated osseous tissue at the extremity of the diaphysis, with loosening of the epiphysis.

In other cases, again, the same septic process gives rise to a limited patch of *necrosis* involving the extremity of the diaphysis, the epiphysial disk and occasionally a portion of the epiphysis. The joint is usually implicated. The site of the necrosis is well shown in the accompanying woodcuts, Figs. 1 to 3.



Fig. 1.—Necrosis of extremity of diaphysis of the humerus and separation of epiphysis. From a young child.

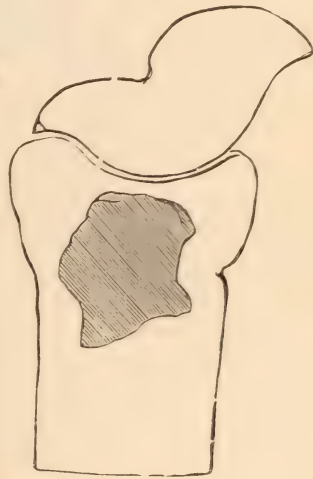


Fig. 2.—Necrosis of extremity of diaphysis and of epiphysis of lower end of tibia. The drawing shows the cavity from which a sequestrum had been removed.

They are taken from a paper which I published on the subject in the Saint Bartholomew's Hospital Reports for 1879, "On Necrosis at the Extremity of the Diaphysis and in the Epiphysis of Growing Bones." In it I pointed out the special

liability of the growing tissue of bones to inflammation, and referred this to "the active nutritive changes inherent to growth and development of the bone, in the multiplication of cartilage cells, development of blood vessels and hyperemia at the line of growth, etc."

A precisely similar lesion in the neighborhood of the epiphyseal line may in older children and young adults give rise to the condition known as *acute necrosis or diffuse periostitis*. The septic products make their way between the periosteum and the bone, the former being stripped off for a longer or shorter distance. The separation of the epiphysis, so commonly found, points to the sight of the osseous lesion as being located in the extremity of the diaphysis. In many instances the joint is involved also.



Fig. 3—Epiphysitis followed by necrosis of extremity of diaphysis of femur (necrosis shaded). Displacement of epiphysis backwards. Suppuration of knee joint and necrosis of portion of compact layer on posterior surface of shaft. From a boy aged eleven years.

Fig. 3 illustrates all these conditions. The periosteum has been stripped up from the posterior surface of the femur and a portion of the compact layer (clearly defined in the wood cut) is necrosed. The epiphysis had separated and the joint had suppurred.

The fact should not be lost sight of that an abscess starting in an epiphysitis may track up the limb along the surface of the bone, and apparently beneath the periosteum, while in reality it is superficial to that structure. A child aged one year was admitted last March with abscesses tracking up the leg due to an osteo-myelitis at the posterior surface of the epiphysial line of the tibia. This was scraped and the abscess drained. Both the tibia and the fibula appeared bare. But after death, which took place six weeks subsequently from pyemia, the periosteum over both bones was found to be intact.

Acute Tubercular Arthritis.—Acute arthritis not differing essentially in its clinical characters from the osteo-myelitic or septic group may be tubercular in origin. This affection in the early stage cannot in many instances be distinguished from acute septic arthritis. The onset is equally sudden, and the child is usually brought with the knee or hip distended with fluid. This, on aspiration, is found to be either pus or sero-purulent fluid. The following case illustrates this fact: Amelia H., aged ten months, was admitted to hospital with acute arthritis of the right knee. The joint became swollen after a blow against a chair. Temperature 101° . The joint was freely opened and after some investigation a small opening was found on the posterior surface of the head of the tibia leading into a sinus which was directed forwards and outwards at the level of the epiphysial disk. The cartilage over the sinus was gouged away and the patch of softened bone beneath erased. The patient's temperature fell to normal and the progress of the case was fairly good, but the discharge from the joint had not entirely ceased three weeks after the operation. At that time vomiting with diarrhea came on, the patient passed into a lethargic state, and died with symptoms of meningitis on the twenty-sixth day after admission. The autopsy revealed tubercular broncho-pneumonia of both lungs, distension of the left lateral ventricle of the brain, with a few tubercles in the choroid plexus. There was considerable erosion of both articular surfaces of the knee joints, especially of the bend of the tibia. The site of the sinus was covered with soft granulation tissue. In this case it is quite clear that a general tuberculosis was established when the child was admitted to the hospital, and that the osseous lesion

was tubercular or the result of a mixed infection with tubercular and pyogenic organism.

In the above case the *tubercular character* of the affection was only ascertained post mortem. In other cases it may be revealed by the fact that under proper treatment the condition of the joint does not improve. The discharge continues and ultimately it becomes apparent that there is a distinct tubercular thickening of the synovial membrane. This is confirmed when the joint is laid open for the purpose of performing arthrectomy or excision.

To indicate still further the close clinical similarity between the tubercular and septic forms of arthritis I may refer to Fig. 4.

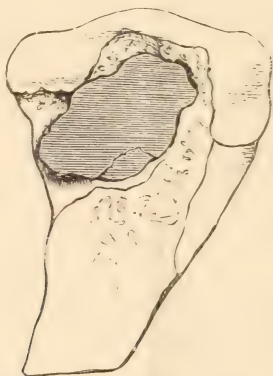


Fig. 4.—Tubercular epiphysitis followed by necrosis in head of tibia. The synovial membrane of knee joint was pulpy and there was suppuration. The cavity containing the necrosis did not communicate with the joint. From a boy aged two and a half years.

This represents a section of the head of the tibia with a necrosis at the situation of the epiphysial line, surrounded by gelatinous granulation tissue. No communication existed between the cavity containing the sequestrum and that of the joint. The patient was a boy aged two and a half years, who had had inflammation of the knee joint for no longer than a fortnight. The left knee was hot and tender, the synovial membrane pulpy and its cavity was distended with purulent fluid.

While dwelling upon the fact that in some instances an acute tubercular arthritis cannot be distinguished from a septic one, I must not forget to mention that not uncommonly a joint which has followed the chronic course of tubercular dis-

ease may suddenly be attacked with purulent arthritis; in many instances this is owing to the bursting into the joint of a tubercular focus on one of the articular surfaces.

Suppurative Syphilitic Arthritis.—The well-known affection of the extremity of the diaphysis of the long bones of infants in congenital syphilis, although not infrequently causing loosening or separation of the epiphysis, rarely gives rise to suppuration and disorganization of the joint. This was, however, observed in the following case: A marasmic infant with the usual evidences of congenital syphilis was brought to me at the London Hospital with one of its elbow joints distended with pus. An incision showed that the articular surfaces were extensively softened and eroded, the whole joint being disorganized. The child ultimately died of exhaustion.

Diagnosis.—The diagnosis of acute arthritis, from whatever cause arising, is usually only too obvious. But in young infants where there is general swelling and edema (for example) of the thigh, and pus has tracked up beneath the muscles of the knee joint, I have occasionally seen good observers misled owing to the distended joint having discharged its contents beneath the muscles. In infants early diagnosis of the osseous lesion, before the joint has become involved, is probably rarely possible; but this should not be the case in epiphysitis of older children. I think that many cases must be overlooked in the early stage because the limbs are not carefully and systematically examined. A child has a slight, feverish attack, and complains of vague pains in a limb, with possibly slight effusion into one or more articulations, which is ascribed to rheumatism. A careful examination would reveal in some instances slight thickening of the extremity of one of the long bones, with some tenderness on pressure, perhaps associated with some articular effusion. Should the symptoms not subside there should be no hesitation in cutting down upon and exploring the affected epiphysis. A timely and intelligent intervention in such cases would, I feel sure, not only save many limbs from impairment and mutilation, but also many lives, for the mortality of acute arthritis and of epiphysitis, even with modern treatment, is appalling. The disease is from the first of a pyemic nature and many patients die with pyemia or with pyemic purulent inflammations of serous membranes; while others succumb to suppuration and

exhaustion. The fatality is, as might be expected, especially high in the case of infants. With a knowledge of the progress made in other departments of surgery by exploratory operations we should not hesitate to employ them in articular affections.

Treatment.—This is practically that of abscess. The joints should be freely opened, drained and supported with appropriate splints. In infants and young children with acute arthritis of the knee joint I find the Gallows splint, of which an illustration is appended, extremely useful.



Fig. 5.—Gallows splint. The T-shaped horizontal pieces fit along the sides and buttock of the child, while the legs are fixed to the vertical pieces. Extension is also used.

The legs being raised to a vertical position, there is no risk of contaminating the dressings with the excretions.

Continuous irrigation, which I have sometimes employed for the knee joint, I have scarcely found practicable at an

early age. In one instance in which this was used the child died on the sixth day of septicemia with pericarditis. The plan of treatment I recommend for the knee joint, and which I have carried out in these cases is to open the joint by a transverse incision passing over the middle of the patella, which is divided. The articular surfaces are thus freely exposed and the opportunity is gained of ascertaining the situation of the osseous lesion. This should be thoroughly exposed, scraped and finally swabbed with strong carbolic acid. In this way the suppurative process in the medullary tissue, which might ultimately give rise to pyemia, may be arrested; and it is possible to render the joint aseptic. The joint is then flushed, the margins of the patella united by silk or silver sutures and a drainage tube inserted. In case 1, which was treated in this way, the temperature, which was 102° at the time of the operation, almost immediately fell to the normal, and there was extremely little discharge from the drainage tube, although this was left in as a precaution for some little time. The wound healed by first intention. The patient subsequently left the hospital with a good and movable joint. The same fortunate results followed the treatment of case 2, although here the progress was somewhat tedious owing to the existence of a large abscess tracking up the thigh. In dealing with the hip, the joint should be opened up by an anterior incision and the bone lesion searched for. An opening for drainage should be made on the posterior surface of the joint.

In operations, such as excision, requiring a free exposure of the hip joint, I employ a modification of the anterior incision, slight in itself but greatly improving the view obtained of the articular surfaces. With the patient recumbent the incision is commenced about one inch vertically below the anterior superior spine, and is carried upwards with an inclination towards the feet and in a curved manner through the anterior margins of the gluteus medius and minimus and the tensor vaginæ femoris till it enters the space between the latter muscle and the sartorius, when it is continued along this interspace in the usual manner. This may appear a slight detail but I insist, on dealing with acute arthritis of no matter what joint, in the importance of employing incisions which freely expose the articular surfaces for examination.

POST PHARYNGEAL ABSCESS.*

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AS post-pharyngeal abscess is a comparatively rare affection, the report of the following case may prove of some interest.

S. W., a mulatto boy, aged six years, was referred to me by Dr. Fowler, on April 16. On examination of the fauces, I found a large fusiform tumor of the right side of the oropharynx, pressing the soft palate forward into the oral cavity and extending downward to the esophageal opening. The tumor extended over three-fourths of the posterior pharyngeal wall and was covered by normal mucous membrane. To the touch it was dense and unyielding, giving the sensation of a fibroid growth. An aspirating needle failed to detect any fluid. The mother, who, by the way, was an unusually intelligent woman, said she had noticed the tumor over two years ago and that its growth had been slow but constant until the present time, when it had attained such proportions as to produce marked dyspnea, rendering it impossible for the child to sleep in the recumbent position. Deglutition was accomplished with the greatest difficulty. The child was cachectic and emaciated. The right cervical glands were enormously enlarged, the child habitually holding its head to the left side. I prescribed mercurial inunctions and cod liver oil, being in some doubt as to the diagnosis. At a subsequent examination one week later I thought I could detect a doughy or boggy spot near the inferior extremity of the tumor.

On May 1 I applied an O'Dwyer mouth gag and made a vertical incision about three-fourths of an inch in length and found the tumor to consist of a sac of caseous pus, about the consistency and looking much like corn-meal mush. Probably about two ounces of pus were evacuated. The dyspnea and dysphagia disappeared at once. Within two weeks the tumor had entirely disappeared and in four weeks the incision had healed and the pharynx was to all appearances normal.

With removal of the pharyngeal tumor the enlargement

* Read before the Louisville Clinical Society.

of the cervical glands rapidly subsided and in two months they have been reduced almost to their normal size. The child carries his head erect, has gained rapidly in weight and is now apparently in perfect health. The remarkable point in connection with the case is the slow development of the tumor.

Those cases occurring in adults present, as a rule, a different pathology and clinical history from those in childhood. In the adult the development is acute and characterized by the usual symptoms of abscess formation in other parts of the body.

In children the process is chronic and the morbid condition is confined to the lymphatic structures of the pharynx.

The disease occurs in children who are the subjects of lymphatism or of so-called strumous diathesis. It is a suppurating lymph adenitis similar to suppuration and caseation of the cervical and bronchial gland and frequently coexisting with them, as in the case reported.

The vast majority of cases I believe to be tuberculous, and the route of infection is by the faucial and pharyngeal tonsils.

The exact function of both the faucial and pharyngeal tonsil is still obscure, but it has been pretty clearly demonstrated that they at least possess a phagocytic action; the lymphocytes which make their way in and out of the lymphoid bodies have the power of taking up the various forms of bacteria and destroying them. The process appears to be similar or rather supplemental to the general phagocytosis exhibited by the leucocytes of the general circulation. This phagocytic power is evidently intended to protect against infection by ingested or inhaled bacteria. But in diseased conditions of the tonsils, instead of protecting against the introduction of bacteria, they actually become channels of invasion. The lymphocytes still possessing the power of migration and of enveloping bacteria and carrying them from the surface, appear to have lost their bactericidal power, and instead of doomed prisoners the bacteria become mutinous parasites feeding and multiplying on the protoplasm of the cells while they are being carried to a neighboring lymphatic gland.

Though diseased lymphoid masses have long been recognized as fruitful source of infection in diphtheria and the exanthemata, attention was not called to the fact that they played an important role in tubercular infection until 1894, when Dr. Sims Woodhead delivered an address before the North Lon-

don Medico-Chirurgical Society on "The Channels of Infection in Tuberculosis,"* in which he forcibly demonstrated the dangers from diseased lymphoid masses. In speaking of the part played by the "lymphoid ring" he said: "It is found when pigs are fed on tuberculous material held in solution, especially if the solution contains fatty or viscid material, that in a very large proportion of cases these animals become affected with tuberculosis of the gland associated with the tonsils." Further on he says: "So far as can be made out from a careful consideration of the results reported by observers who have collected statistics, and from my own observation of a number of similar experiments, I am driven to the conclusion that this method of infection of the glands of the neck through the tonsils must be of comparatively frequent occurrence, especially in children living under unsanitary conditions, and subjected to various devitalizing influences."

I think it reasonable to conclude that not only the post-pharyngeal abscess but the more common affections, the enlarged cervical and bronchial glands which so constantly accompany lymphoid hypertrophies, are due to tubercular infection through this channel; that instead of being a part, a diathesis, or dyscrasia, which has generally been described as lymphatism or scrofula, they are most likely the result of tubercular infection through the diseased lymphoid masses, either of the pharyngeal or faucial tonsils.

REMARKS.

Dr. W. C. DUGAN: I am surprised that Dr. Evans makes no mention of external incisions for the relief of such abscesses. When you open a post-pharyngeal abscess for the pharynx, you expose the patient to infection from the buccal cavity. Unless we find that the abscess points or that it is very superficial and that necrosis would most likely take place at that point anyway, I believe it would be better to open it externally, as the subsequent treatment would be much more satisfactory than it would to make an opening through the buccal cavity. If it be tuberculous, and they are usually of that nature, you would at once have added the streptococcus and other suppurative bacteria to the tubercle bacillus which is supposed to be the cause of these abscesses. If I were to meet with a case in which the

* *Lancet*, October 27, 1894.

tissue was very thin, and necrosis would most likely take place whether it was opened or not, I would then open the abscess as was done in this case, but unless such a condition was found I would prefer a lateral incision, going behind the carotid artery, jugular vein and the plexus of veins.

Dr. AUGUST SCHACHNER: I saw the case Dr. Evans has reported, and was much interested in its slow and gradual development. The father, at least, gave a history of syphilis, and the child's appearance would indicate that there might be a tuberculous element in it.

Dr. J. G. SHERRILL: This certainly appears to be a unique case as far as its development is concerned, and I agree that it is probably tuberculous in character. But I do not agree with Dr. Dugan that the operation of incision should be made through from the outside—that is through the skin and tissue of the neck. That is an operation of considerable magnitude, especially owing to the anatomical relation of the arteries and vessels in this part; also we must remember there are several layers of fascia in the structures of the neck, which fact would increase the dangers should infection take place; pus might burrow down into the thoracic cavity on account of our inability to get thorough drainage through these layers of fascia, therefore I am in favor of the plan pursued by Dr. Evans in this case. I think the danger of infection through the vault of the pharynx or through the mouth could be controlled more readily, with less trouble to the patient and to the surgeon, than if an incision was made through the neck.

Dr. P. GUNTERMANN: As far as treatment of the case is concerned, very much depends upon the case; individual cases have to be treated individually. I think post-pharyngeal abscesses are rather rare. I recollect one case in a negro girl that occurred in the City Hospital during my service there some years ago. She was certainly very ill; she had been examined by the house surgeons, by the resident physicians, and was finally brought into my ward, and I did not know what to make of it. She did not complain of anything except that she was "ill." In an examination of her mouth and throat, not by means of the mirror, but by sunlight, it struck me that the pharynx was peculiarly stretched and glossy. By inserting my finger well down into the throat, no elevation and no tumor could be detected, and nothing but the peculiar stretched

and glossy appearance of the pharynx attracted my attention. With the examining finger against the glossy pharynx I thought I detected fluctuation. Dr. Satterwhite was in the surgical ward at the time and was called in to see the patient; I directed his attention to the condition present, and we concluded that it was a post-pharyngeal abscess. We opened it freely and let out a large amount of pus which had caused no inconvenience, no obstruction to breathing, nor a tumor, in fact nothing except that the girl felt very ill. After evacuating the pus and washing it out thoroughly, the girl left the hospital feeling perfectly well in about a week. The opening in this case was made from the inside.

Dr. J. W. IRWIN: The case, although very briefly reported, is one of those conditions we are all likely to see, and though there seems to be little room for controversy, I am glad to see two opinions expressed as to where the abscess should be opened. It seems to me that no special rule can be instituted in the treatment of post-pharyngeal abscesses, but that every case must be treated as indications present themselves. If the abscess is not too large, and if there is no decided evidence of its coming near to the surface externally I can see no reason why it should not be successfully opened and drained on the inner side; I think that would be the legitimate course to pursue. If on the other hand the lateral wall of the pharynx is affected, if there is much bulging about the angle of the jaw, I think an external opening would prove satisfactory. There is one objection to the external opening and that is the resulting cicatrix. Most people, especially young ladies, object to having any cicatricial tissue about the face; with men this is not always the case.

Dr. T. C. EVANS: In regard to opening a post-pharyngeal abscess externally, I cannot agree with Dr. Dugan. The external opening is a very serious operation when you take into consideration that the cervical glands are also enlarged. An operation of sufficient extent to open the post-pharyngeal cavity, and not cut into pharynx proper, would mean that you must remove the cervical glands. The main objection to opening the abscess through the mouth is that the patient continually swallows pus, which produces considerable disturbance of digestion. This is a danger of more importance than infection through the mouth; for wounds about the pharynx, also

about the nose and naso-pharynx, are not likely to become infected. It would appear that a cavity which contains as many germs and microbes as the buccal or nasal cavity would be peculiarly likely to become the seat of infection, but we find that in operating upon the nose, throat, pharynx, etc., we rarely have sepsis following the operation.

REPORT OF A CASE OF GASTRO-INTESTINAL HEMORRHAGE IN A NEW-BORN INFANT.

By FRANK W. GARBER, B.S., M.D.,
Muskegon, Mich.

HEMORRHAGES in the new-born from causes other than faulty or insecure ligation of the cord, while sufficiently recognized in the literature of the diseases of childhood, are yet so infrequently met in practice as to render the report of a single case of general interest. The following case is submitted in the hope that it may prove helpful to those who, like myself, are confronted for the first time with the alarming symptoms presented by a hemorrhage from the stomach and bowels of a new-born baby.

On September 16, B. L., a Dutch woman of thirty-three, gave birth to a large, well-formed and apparently healthy female child. The labor was not prolonged, and was seemingly normal in every way. The vertex presented; there was no prolapse of the funis, nor was it wrapped about the neck of the child. The cord was not unusually short, and there was no bleeding subsequent to ligation. The child cried lustily, and respiration seemed to fill and expand all parts of the lungs. The color was good, with no evidence of cyanosis at any time following the first few inspiratory acts.

The mother's health was not vigorous at the time of confinement and for some time previous. She had had for several weeks during the latter part of her pregnancy the anxiety and care of sick children. Added to this there had been some acute bowel trouble accompanied by diarrhea about two weeks before the birth of her child. Following the confinement, in which she had been attended by a midwife with rather lax ideas of asepsis, there was considerable fever.

For the first twenty-four hours the child seemed well. It nursed greedily, and the over-zealous attendant gave it at sev-

eral different times a feed of crackers and hot water. This, by the way, is a favorite diet for the Dutch babies of this region, and, strange to say, many of them do not die but seem to thrive on it. During this period there were three movements of the bowels of the usual character. The second night following the baby's birth it vomited a small amount of blood mixed with mucus, and about forty hours after its birth it had a large stool of dark, clotted and almost clear blood. This was followed in a short time by two movements more, each of the same character. The baby became extremely pale and showed the usual signs of great loss of blood. It seemed to have occasional paroxysms of pain. The pulse was rapid and feeble. The child lay in a state of stupor.

Enemata of normal saline solution were at once given it in such quantities as the bowel would retain, and repeated as frequently as would be tolerated. To these were added small amounts of brandy, and the whole made as hot as seemed advisable. Internally a mixture of ergot and gallic acid in anise water were given every two hours. The patient did not rally rapidly, but persistence in the treatment outlined was finally rewarded by evidences of returning strength. On the second day the stools began to be normal in appearance, and gradually all signs of blood disappeared. At the end of a week from the time of the hemorrhage the child was apparently as vigorous as ever, though still pale. The mother, under appropriate treatment, had recovered from her fever and was able to give it a suitable supply of nourishment.

It is difficult to determine the exact cause of hemorrhage in this case. It may be assumed that there was some congenital weakness of the blood vessels predisposing to easy rupture. If so, it must have been peculiar to this child, as there is no history of hemophilia in the family, and the causes to which these hemorrhages are often ascribed, such as unusual shortness of the cord, breech presentation, compression of the cord and atelectasis were absent. The fortunate recovery of the child, of course, made it impossible to do more than speculate on the cause of the trouble. It seems improbable that an erosion or ulceration existed in the gastro-intestinal tract, in view of the rapid improvement of the patient. I think it is not unfair to assume that the usual hyperemic condition of the mucous lining of the gastro-intestinal tract result-

ing from the rearrangement of the circulation of the abdominal viscera after birth was so intensified by the presence of the indigestible food given it that the delicate blood vessels gave way under the pressure. The gastric disturbance was probably aggravated at a time when the mother was suffering from sepsis.

It is possible that hemorrhage in the new-born is of more frequent occurrence than is usually discovered. The autopsy has revealed extravasations of blood into the pleural cavity, the pericardium, the peritoneum and the brain. A case of peculiar pathological and clinical interest is reported by Milroy. A child twelve and a half hours old, of healthy parentage, lusty at birth and normally delivered, was taken with sudden vomiting. It became pale and cold, with sunken features and rapid, shallow respiration. Expiration was accompanied by a sharp cry. Death ensued within two hours from the onset of vomiting. The autopsy revealed a large hemorrhage into the supra-renal capsule of the right side. The cause of hemorrhage in this case was equally as obscure as in that of my own, but was ascribed by Milroy to some congenital deformity of the part which weakened the veins and caused them to give way under some undeterminable obstruction.

Pollak has reported a case of hemorrhage from the vagina of a child four days old. The flow was repeated several times a day and finally disappeared entirely on the ninth day. No cause is given, and, indeed, in many of these cases no cause can be discovered. It is often a matter of pure speculation except in these cases of hematemesis, where a careful search will show the source of the blood to have been a cracked nipple in the mother or some bleeding from the nasal passages resulting from continued pressure at the time of birth.

PRACTICAL NOTES.

Congenital Closure of the Esophagus in a new-born infant has been observed by C. K. BOWES. The child presented a number of other abnormalities besides, and was a remarkable case on account of their variety. The fingers were easily directed to the elbow, and both radii and thumbs were absent, the ulna of both sides were curved and shorter than normal. The baby died thirteen days after birth, without having taken any nourishment, as the latter would always flow out again through the nose. Autopsy revealed that the upper portion of the esophagus consisted of a cul-de-sac, which extended above the larynx, and that the lower portion led into the trachea below its bifurcation. When the heart was opened the septum interventricularum was found defective in its upper portion. It is highly interesting that the child was able to live for thirteen days without food.

Three Cases of Appendicitis in children occurring in the course of or following *influenza* were observed by Merklen, in which a family predisposition for disease of the vermiform appendix was present. The author therefore sees a connection between these two affections, assuming that an increased virulence of the common micro-organisms of the intestine takes place during the course of such diseases in individuals who are predisposed to disease of these parts.

A Specimen of a Congenital Sarcoma of the Thigh which did not originate in the bone was exhibited by MAAS in the Berlin Surgical Society (8. 3. 97). The case was that of a two-months-old child, whose mother had observed the presence of a blue spot on its thigh just after birth; the spot at first was on a level with the skin, but gradually rose above it, increased also in circumference, and caused hemorrhages. When Maas first saw the tumor, it was the size of an apple, quite soft, and not adherent to the bone. He operated, at the pressing request of the parents, and was compelled to resect a portion of the femoral vein. The child died soon after the operation. The tumor probably originated in the sheath of the vessel; it consisted microscopically of round

and spindle cells, and was extremely vascular; in spots there were found blood spaces in which a true wall could not be distinguished; in all probability the tumor was a teleangiectatic sarcoma.

A Drainage Tube in Place of a Tracheal Canula was employed by Dr. S. KOFMANN (Odessa) in a child nine months old, who had been tracheotomized for chronic obstruction to the respiration. He used a drainage tube about 8 cm. long and one-half a cm. wide, and split about one and a half cm. of it longitudinally, thus forming a shield; two openings were now made into the divided portion and cords passed through the perforations. The child, who did not bear the presence of the tracheotomy tube, took kindly to this substitute, and the author recommends the use of this in place of the canula, which latter when worn for some time is the cause of much discomfort and danger, especially when used in young children.

Tincture of Strophantus in Pulmonary Edema of Children has been used with excellent success by Dr. A. M. GREGOR (North London Hospital). In one case pulmonary edema suddenly developed in a boy seven years old suffering from chronic pleurisy and peritonitis. Digitalis produced no effect, when strophantus was substituted—at first one, then two drops every three hours. The symptoms rapidly improved and disappeared. In the other case pulmonary edema made its appearance after scarlet fever in a girl nine years of age. In this case the remedy was exhibited every three hours, at first in two-drop doses, later in three-drop doses; within twenty-four hours the patient, who had been suffering from complete anuria, began to urinate, diuresis became very copious, and with it the symptom of pulmonary edema disappeared.—*Centralbl. f. Kinderheilkunde.*

Chlorosis.—Huchard laid down the following rules on the treatment of chlorosis in a report before the Paris Therapeutic Society: Rest, fresh air and iron are of primary importance in the cure of chlorosis. A patient suffering with chlorosis should not be sent to regions of high altitude, because too great an opportunity is here offered for laborious and exhausting mountain climbing, and the air at the same time is too rarefied. It is best to select an altitude of 800 to 1,000 meters

Sea air is contraindicated. Iron is undoubtedly a specific for chlorosis, but its action is not the same in all varieties of chlorosis. In one series of cases it is inactive, in others harmful, and in a third very effective. The first series consist of those light forms of chlorosis which are cured by rest, proper food and country air. Cases which present dyspeptic symptoms are injured by iron. Where gastric symptoms are absent, iron will prove beneficial even in the worst cases.

Aphthous Stomatitis.—

℞	Potas. chlorat.....	4.0
	Tinct. myrrh.....	3.0
	Aq. destill.....	200.0

Sig.—For spraying the oral cavity, and

℞	Potas. chlorat.....	1.0
	Aq. destill.....	90.0
	Syr. rub. id.....	10.0

Sig.—Keep on ice. Give one teaspoonful every two hours.

In stubborn cases, with severe pain, painting the mouth with a solution of salicylic acid (Hirtz) or corrosive sublimate is to be recommended. Use any of the following solutions:

℞	Acid. salicyl.....	2.0
	Alcohol.....	10.0
	Glycerin	20.0

Mix.

or

℞	Sodii salicyl.....	20.0
	Aq. destill.....	100.0

Mix.

or

℞	Hydrarg. bichlor.....	0.1
	Aquæ destill.....	50.0

Mix.

—A. LEVI, *Wien. Med. Blaett.*, 1897, vi.

Burns, Acne, Eczema, and Lupus. (*Der Kinderarzt*, 1897, viii, 144).—

℞	Ichthyol.....	3.0
	Lanolin.....	5.0
	Adip. suill. benzoat.....	10.0
	Aq. destill.....	12.0

Mix. Ft. ungt. Sig.—External use.

Blepharitis Squamosa.—

R	Ichthyol.....	0.5
	Ungt. zinci oxyd.....	10.0

Mix. Ft. ungt. Sig.—To be applied to the corners of the closed eyelids.

Hypertrophy of Tonsils.—

R	Iod. pur.....	0.05
	Potas. iodid.....	0.1
	Laudan pur.....	1.00
	Glycerin pur.....	100.0

Mix. Sig.—Use as a paint, and gargle twice daily with a solution made by adding one-half a coffeespoonful to one half a glass of lukewarm water.—MOURE.

For the Itching of Eczema of the Scalp.—

R	Acid. salicyl....	0.25
	Menthol.....	0.5
	Ol. lini.	
	Aq. calcis.....	ââ 25.0

Mix. Ft. ungt. Sig.—For external use.—STEINHARDT.

Bullets in the Brain.—Steffen reports five cases of encysted bullets in the brains of children. In all the cases, grave disturbances which varied according to the seat of the bullet made their appearance. The bullet remained embedded in the brain, at a greater or less distance from the point of entrance. In the majority of cases perfect recovery finally resulted. This fact should be especially emphasized, as Bruns maintains that there is hardly one case on record in which a cure was obtained after a bullet had traversed the brain in its greatest diameter. In two of the cases reported by Steffen, death, it is true, occurred some time after, not however as a result of the injury, but from intercurrent disease. He is therefore inclined to give a more favorable prognosis in gunshot wounds of the brain in children than in adults, for the reason that the brain of the child is better able to overcome the effects of such an injury, as it is still in the stage of development, and it is probable that other regions may take on the functions of the injured tracts.—*Berl. Klin. Wochensch.* 1897, xxxiv, 239.

EDITORIAL.

THE MEDICAL CONGRESSES AND THEIR WORK IN REGARD TO DISEASES OF CHILDREN.

LAST month was a noteworthy one in the world of medicine by reason of its congresses. At Moscow members of the medical profession gathered together from all parts of the civilized globe, while Montreal was the goal of English speaking doctors only. Both of these meetings appear from all accounts to have been successes viewed either from a medical or social standpoint. So far as numbers go Moscow was more than a success; it was a triumph. Indeed, when a well-known and popular man like Virchow, Lombroso or Bergmann was speaking the crush is stated to have been unpleasant. The intense heat, too, added to the discomfort. It is estimated that there were present in the ancient capital of Russia considerably more than 7,000 visitors, 120 of whom were Americans, and, according to Sir William McCormac, 300 English. Everything possible seems to have been done for the comfort and pleasure of the guests. The English speaking doctors were naturally greatly handicapped by their ignorance (that is with few exceptions) of the Russian, French and German languages. The members of other nationalities were hampered in a very much less degree through their lack of knowledge of the English tongue. It is said that a feeling of unrest took possession of the audience when an Englishman spoke, although the American speakers were listened to with attention. This, if true, was probably due to the unpopularity of the English not only with the Russians but also with most of the other Europeans.

The program of the section devoted to the diseases of children was long and was, as a matter of course, of the highest possible interest. Papers were contributed by many of the

greatest authorities on these diseases. Among the most important papers read was one by Professor Hoebner, of Berlin, on chronic nephritis and albuminuria in children. The discussion on intubation of the larynx also aroused much attention, and the battle of tracheotomy versus intubation was again fought by the partisans of either method. On the question of the efficacy of anti-toxin in diphtheria the unanimity of opinion was remarkable, some of the speakers being especially emphatic in its favor. Another subject fully dealt with was the artificial feeding of children, and in the discussion that followed Dr. Cotton, of Chicago, took part. In response to the invitation of the Canadian members of the British Medical Association, this country sent to the sixty-fourth annual meeting of that body quite a strong contingent of doctors. It is computed that more than 1,000 in all visited Montreal, the Americans contributing 300 of this number. This year, as is usually the case at these meetings, the subject of children's complaints played but a small part. In the section of mental diseases Dr. G. A. Shuttleworth read a paper on hereditary neuroses, recapitulating his well-known views and ending his address by urging the necessity of educating public opinion as to the harmfulness of the intermarriage of neurotic persons. From these meetings at Moscow and at Montreal two instructive deductions may be drawn (or at any rate strongly emphasized). One is the increasing attention that is now being paid to a thorough and special study of pediatrics throughout the European continent. This fact was amply demonstrated at the Congress at Moscow. And the other is the comparative apathy and indifference displayed by English medical men on the same question. At Moscow, while Russians, French, Germans and members of the medical profession of all the continental nations, gave the results of their research and experience, no paper on the diseases of children was contributed by an Englishman. Again, in the United Kingdom there is in none of the leading medi-

cal journals a portion set aside for pediatrics. It is a truth not to be gainsaid that a very small amount of interest is taken in England in the study of the diseases of children as a specialty. That there are many English physicians who are thoroughly well versed in the complaints of the young is not denied, but these have gained their knowledge by experience. Pediatrics as a special branch is neglected in Great Britain. The congresses at Moscow and Montreal have served to show up the defect more clearly than ever.



EDITORIAL COMMENTS.

Universal Hypertrichosis and Premature Menstruation in a Child.

An example of this extremely uncommon abnormality is quoted in the London *Lancet*, September 18th, from the *Revue des Sciences Medicales* of July. The child, a female, now six years old, presented no abnormal signs at birth, but has for the last two years developed a remarkable quantity of hair. The lower limbs of the body were thickly covered with hair of great length. The pubic hairs were more developed than many grown women. There were whiskers on the face, but the hair on the head was normal. Menstruation commenced at three and continued at regular intervals for eighteen months, when it ceased. It is stated that the child's parents were of normal development, as were the brothers and sisters, with the exception of two brothers next in age to the child, who, although under sixteen, had beards. The *Lancet* points out that the case shows more than precocious development in regard to the hair. There is also production of male characteristics. Cases of partial and localized hypertrichosis and congenital lumbar hypertrichosis, although sufficiently rare, do occur occasionally. It is one of the external conditions of the lumbar region that accompanies "Spina bifida occulta." This coincidence was first pointed out by Virchow, who gave the name of "Spina bifida occulta" to the deformity. The cause of the abnormal hair growth in these instances is doubtless irritation. Virchow infers that the cases of "Spina bifida occulta" are of the nature of transmitted pathological heredity. Bland Sutton says that the possession of lanugo by the fetus, which is as a rule shed in uterus, is a clear indication of a lost adult character merely persisting in the embryo in obedience to heredity. In scrofulous children a growth of fine silky hair is seen down the sides of the face in front of the ears. This ex-

ample mentioned in the *Revue des Sciences Medicales* can scarcely be classed under the head of any of these diseases, and universal hypertrichosis, when found, generally occurs in both men and women at the age of about 45. However, taking into consideration the fact that the child's young brothers presented the same abnormality, although in a much less degree, heredity doubtless played the most prominent part in this curious development.

Children's

Dress.

The time of the year is fast approaching when mothers begin to think of making a change in their children's clothing. Some parents, indeed, believe in rearing their offspring on the Spartan principle, and by training them to undergo the changes of climate without altering the texture or weight of their garments, to strengthen their mind and body at the same time by this form of physical education. The method is termed the "hardening" process, and is a relic of the long passed away age when the "survival of the fittest" was a doctrine of universal belief. Now customs have changed and the object is to preserve life no matter how thin the thread may be by which it hangs. Naturally the question of clothing children is a matter that chiefly concerns the parents, and must be left to their judgment. Nevertheless the doctor is often consulted to decide the point as to which child can stand roughing it and which one the method may injure. There are children on whom the application of the "hardening" process has the best possible effect, and again there are as many, and may be more, to whom such a course of training will bring disastrous results. Discretion should be exercised; the constitution of the child should be taken into account. Underclothing is the most important part of a child's dress, and it may be said that although the material should vary in weight with the seasons, the substance should always be of wool. To wear linen next the skin is a great error in personal hygiene. With regard to the feet, the necessity of keep-

ing them well covered and warm need scarcely be urged, and for them as for the rest of the body wool is the most suitable envelope. In fact whatever are the views of particular members of the medical profession with respect to the mode of physical education, there is a general consensus of opinion in favor of woolen garments being worn next the skin.

**A Reported Cure
for Croupous
Pneumonia and
Laryngeal Croup.**

The discussion on the relative merits of intubation and tracheotomy as a remedy for croupous affections of the air passages has been prevailing for a very considerable time, indeed almost ever since Dr. O'Dwyer made known his discovery, and the point in regard to the superiority of one or other of these methods of treatment has not by any means been yet settled. Now it is contended that both laryngeal croup and croupous pneumonia can be not only benefited but absolutely cured without the aid of surgical interference, and doing away as well with the danger and inconvenience attending the use of the tube with young children. Stenosis of the larynx will be unknown and intubation and tracheotomy will be alike dispensed with. According to the *Journal of the Medical Association* a panacea that will nip in the bud croupous pneumonia without fail has just been brought before the public. Dr. Spiklai announced his discovery in a paper, read at the Moscow Congress, entitled *Le traitement des maladies croupeuses avec la pilocarpine*. Dr. Spiklai claims that all exudations thrown out by mucous surfaces are liquefied by pilocarpin, and in this condition are readily thrown off or absorbed. In croupous affections of the air passages this agent is said to act like a veritable charm; no other remedy can compete with it. In severe cases of heart lesion pilocarpin is sometimes contraindicated, but even in these cases, if care be used, no danger need result. All this sounds rather too good to be true, and it is more than probable that it will be necessary to have recourse to tracheotomy or intubation for a few months longer. If, however, Dr. Spiklai's

cure is proved to be effective, he will indeed have shown himself a benefactor to his race.

**Mental Evolution
of Childhood.**

Probably of all the papers read at the meeting of the British Medical Association at Montreal no one of them attracted more general attention than that composed by Dr. Bucke, medical superintendent of the Insane Asylum, London, Ontario, Canada. The subject of psychology appears to hold a peculiar fascination for those persons even who possess but a superficial knowledge of it. The ordinary every day individual, as well as the man of science, likes to watch and ponder over the successive stages of growth of mind and body. Perhaps the degree of mystery involved in the study of evolution is the attraction. Dr. Bucke, speaking of the evolution of the mental faculties before the dawn of self consciousness, says: "Of all the mental faculties below self consciousness, each one has its own time for appearing in the human infant, as for instance memory and simple consciousness appear within a few days after birth, curiosity two weeks after, use of tools twelve months after, shame, remorse and a sense of the ludicrous fifteen months after. Not until the child is fifteen months old does self consciousness make its appearance; color sense usually comes at the age of five. The human moral nature belongs to a much later stage of evolution than any of the faculties so far considered. It does not make its appearance in the individual before the age of fifteen years. Child study in this country has of late years received a great impetus, chiefly owing to the labors of Stanley Hall, the pioneer in that branch of psychology. The fact should be borne in mind that child psychology is not only an interesting study, but can also be put to practical use. It is an aid to the physician in that he requires to be thoroughly conversant with the normal type so that he may be able to distinguish and treat the abnormal when it comes before him.

ABSTRACTS.

PERITRACHEOLARYNGEAL ABSCESS IN CHILDREN.

F. MASSEI (*Centralbl. f. Chirurg.*, 1897, xxiv, 169). During the treatment by intubation of acute laryngeal stenosis in children it has frequently happened to the author that in place of the expected pseudomembranes, pus was brought up, in inserting the tube, from the interior of the larynx. His studies as to the origin of this pus have led him to recognize a new disease process, namely, the peritracheolaryngeal abscess. This consists in the suppuration of the upper group of a chain of lymphatics, minutely described by Léval-Piquechef and Gougenheim, which take their course laterally along the trachea in close proximity to the recurrent nerve, and which by their tumefaction cause the yielding side and posterior wall of the trachea at the point of the most superior tracheal ring to bulge into the tracheal lumen. This process may produce the symptoms of an acute laryngeal stenosis. On examination the subglottic mucous membrane, of a velvety red color, is seen bulging out, and when it exerts pressure on the recurrent nerve, a paresis of the vocal chords will also be present. In the treatment intubation may be tried; if the abscess is, however, recognized, either by a previous lucky examination, or at the time of intubation from the contact of the tube with an unsurmountable obstacle, tracheotomy should at once be resorted to. If, however, the abscess has already progressed so far that the mucous membrane is tense and thinned, we will be able easily to open it with the tube, and then pursue a symptomatic treatment.

A CASE OF SPINAL CARIES TAKING AN UNUSUAL COURSE.

H. OPPENHEIM (*Berl. Klin. Wochens.*, 1896, xxxii, 1040). The case reported was that of a boy, fifteen years of age, suffering from secondary disease of the spinal cord due to a spondylitis. The unusual course of the disease makes it interesting. Simultaneously with the appearance of the deformity of the spine, symptoms of paralysis came on, that is, disturbance of the sensibility, atony of the bladder, and weakness of the legs, which latter finally became totally paralyzed. This paralysis had already existed five or six years when the patient was first seen by the author. He began treating him with the electric current, i. e., he applied the continued current to the diseased spot of the spine. After two weeks' treatment the patient, to Oppenheim's great astonishment, was able to bend his thighs; improvement continued, so that

the boy could finally walk alone, and can cover great distances with the help of a cane. The disturbances of sensation and atony of the bladder have also disappeared. We will be able to find only very few cases in literature where a paralysis, not hysterical, was cured after lasting five to six years. The tissue of the spinal cord, according to the symptoms, was of course not totally destroyed at the point of compression; if that had been the case it were to be expected that the sequelæ produced by the long existence of this compression would have remained. The fact that the improvement was caused or influenced by the use of the constant current must not be overlooked. Perhaps a slight change only in the mechanical and nutritive conditions of the partially destroyed spinal cord was necessary, and the galvanic current had the power to induce this change.

The fact that improvement took place just at the time of puberty, when mighty changes in the organism, and particularly in certain portions of the spinal cord, naturally take place, and which may have influenced the condition of nutrition in this organ in a way tending towards improvement, is also worthy of note.

ON CONCOMITANT MOVEMENTS OCCURRING IN PARALYZED AND NON-PARALYZED IDIOTIC CHILDREN.

KOENIG (*Berlin. Klin. Wochenschr.*, 1897, xxxiv, 17) points out that in spite of a whole series of casuistic communications on concomitant movements we have up to the present missed the examination of a very large amount of material, embracing especially all the manifold forms of infantile cerebral paralysis, and not alone the forms of hemiplegias; furthermore, we still lack an analogous series of examinations of non-paralyzed idiotic children, a want whose fulfilment, in view of the fact that a remarkable tendency to concomitant movements is present in children, and still more in idiotic children, seems to be very desirable.

The author's studies embrace forty-six cases of infantile cerebral paralysis of the greatest variety, and thirty-eight non-paralyzed idiotic individuals from the ages of seven to twenty-one years. He distinguishes four kinds of concomitant movements:

1. Typical or corresponding concomitant movements (Westphal's "Identische Mitbewegungen"), that is, concomitant movements in which the same muscles on opposite sides are put in motion.

2. Irregular corresponding movements, which consist in the movements of the same extremities of opposite sides, but not in the like manner and to the same extent.

3. Typical concomitant movements (Senator's "Asym-

metrische Mitbewegungen ") which are such as make their appearance in any one of the non-corresponding muscles.

4. Reflex concomitant movements, which are produced by any irritation of the periphery (the prick of a needle on the volar surface of the hand, or the plantar surface of the foot).

He gives the following resumé of his results:

1. Concomitant movements were totally absent in fifteen per cent. of cases of paralyzed individuals, and in thirty-four per cent. in the non-paralyzed.

2. All forms of concomitant movements which were found in the paralyzed were also found in the non-paralyzed, *with the exception of reflex concomitant movements*. The most marked difference in the two is that in the paralyzed the concomitant movements are more frequent, appear as a general rule with greater intensity, and are, as it seemed to him, less easily suppressed by the will, i. e., practice.

3. Concomitant movements do not accompany by preference any particular form of infantile cerebral paralysis; on the other hand, it seems that in the pure hemiplegias the cases in which they occur on movements of the paralyzed as well as of the non-paralyzed fingers, preponderate over those in which they are only found unilateral.

4. The well-known fact has again been determined that concomitant movements of the fingers are those which are most infrequently absent, and should therefore be given the greatest weight.

5. As regards the pathologico-anatomical findings, the results of the author's studies give support to the fact that concomitant movements occur in disease of the cortex as well as in that of the great ganglia. He also adds that he has observed concomitant movements in disease of the pyramidal tracts and when they were not involved.

6. In idiots which were not paralyzed, concomitant movements were observed up to the eighteenth year of age. In three cases, which were older, they were absent.

7. A relation of the concomitant movements to the age of the non-paralyzed idiots according to a fixed rule has not been noted.

As to the cause of the concomitant movements he, in accord with Senator and W. Sander, saw no reason to repudiate Hitzig's theory.

CHRONIC STREPTOCOCCUS PNEUMONIA.

FABER (*Centralbl. f. Innere Medicin*, 1897, xviii, 277). Of late years pneumonias have been divided into a number of subdivisions, on an etiological basis. One of these is the streptococcus pneumonia. The acute form is distinguished by its peculiar atypical temperature-curve, and section discloses confluent, and frequently pseudolobular, infiltrations. The

author has studied a number of these forms, and comes to the conclusion that they are identical with what was formerly called bronchiectasis with infiltration. It frequently begins with the symptoms of an acute pneumonia, the subjective symptoms disappear, the fever falls, but presents frequently recurring exacerbations. The signs on auscultation, however, remain unchanged, and finally a depression of the thorax and other symptoms of retraction of the lung make their appearance. The disease may also begin as a bronchitis. The sputum contains numerous streptococci. The course is slowly progressive, and has a similarity with tuberculosis, with which it may be complicated. The prognosis is grave.

A SYMPTOM OF TRACHEAL-STENOSIS.

AUFRECHT (*Centralbl. f. Innere Medic.*, 1897, xviii, 6). Symptoms of tracheal-stenosis are sparse and rather uncertain. In the beginning, so long as the influx of air is only slightly diminished in quantity, the patients, as observed by Gerhardt, remained free from symptoms. As the contraction, however, increases, a characteristic symptom makes its appearance, which was first described by Empis as "cornage trachéo-bronchique." This is probably the same sound described in the third edition of Eulenburg's "Real Encyclopædie" (V. iv, p. 43) as a mewing inspiratory murmur, which is most distinctly heard when the patient makes some bodily exertion, climbing stairs for example. The sound is so peculiar that probably any one who has once heard it retains it in his memory, and by it alone will be led to make a diagnosis of tracheal-stenosis.

Another symptom, which is not, however, in itself of any great moment in the diagnosis of tracheal-stenosis, but more so in deciding the question whether the stenosis is situated in the larynx or trachea, is mentioned by Gerhardt: "In stenosis of the trachea, the larynx does not move up and down at all with the respiration or only very little; in stenosis of the larynx it exhibits, as a result of the conditions of pressure of the columns of air above and below the contracted point, very great respiratory excursions." Biermes, it may be mentioned, however, declares this symptom as uncertain.

Latterly the author observed another symptom of tracheal-stenosis not yet described, in three cases, which seems worthy of recording. Two of these patients were suffering from a carcinoma of the mediastinum, which had invaded the trachea at the point of bifurcation, and had gradually blocked the entrance to both bronchi; the third case was that of a gumous syphilitic tumor which occupied the left half of the wall at the lowest portion of the trachea, and was of the size of a plum. The lumen of the trachea, as shown at the autopsy, was blocked by it in its greatest extent, as it projected

into the latter with half its volume. The whole tumor nearly was softened, and the softened mass would have broken through the mucous membrane, which was greatly attenuated; therefore a perfect recovery might have been obtained from the exhibition of iodide of potassium for the space of several months, had not a pneumonia of the lower half of the right upper lobe induced death.

In these cases he demonstrated with the stethoscope in position over the trachea, immediately above the jugulum sterni, that the loud, rough respiration which is heard in all cases under normal conditions during the full duration of inspiration and expiration, was replaced by a short, low, soft respiratory sound, or was absent altogether. The explanation of this change in the sound over the trachea is simple. When under normal conditions the air, passing from the narrow glottis into the wide trachea, produces bronchial breathing, this only occurs as a result of the formation of air currents on the other side of the stenosed portion, that is on the other side of the glottis. To produce this, however, there is needed a certain velocity of the air current, which in the normal condition is assured by the approximately equal width of the whole trachea. Should the latter, however, be contracted at some point, so that its lumen here becomes equal to that of the glottis or smaller, then the air currents must become weaker in passing from the glottis into the trachea, and cause the normal bronchial breathing to be modified as mentioned above, and thus make it valuable in the diagnosis of tracheal stenosis.

RESECTION AND SUTURE OF THE TRACHEA.

FOEDERT (*Wien. Klin. Wochen.*, 1896, ix, 1258). The following case is of great interest, particularly as it was followed by good results, and as we only meet with few reports on resection of the windpipe and the use of the circular suture. The case was that of a boy nearly six years of age, whose trachea had been severed with a knife below the cricoid cartilage. After a suture had been applied and a canula inserted, the boy was again able to talk on the fifth day after removal of the canula; dyspnea, however, soon set in, and the canula had to be reinserted. The stenosis rapidly increased, and the author was unable to find any communication between the larynx and trachea, either by laryngoscopic examination or by use of the sound.

The windpipe was then resected a little below the tracheal fistula; on searching for the upper end a greatly deformed tracheal ring was found below the cricoid cartilage, while the anterior wall of the remaining windpipe was contracted, in the shape of a funnel, and changed into tough cicatricial tissue in which no cartilage could be recognized. To obtain a normal

upper lumen, the whole cartilage with the ligamentum crico-tracheale had to be removed. The two ends gained by the resection were separated about three cm. To join them the windpipe was separated from the cicatricial tissue up to the point where lower tracheotomy had previously been done, when they were easily lifted out and joined by catgut-sutures, which were passed through all the layers. After introducing Salzer's canula and suturing the soft parts, the head was firmly secured in a position leaning forward. No fever appeared; deglutition was performed without pain. Healing progressed undisturbed. After the removal of a few granulations along the suture line, on the inside of the larynx, respiration became free and the voice strong and clear.

AEROTHERAPEUTICS AND HYDROTHERAPEUTICS IN THE TREATMENT AND PREVENTION OF PUL- MONARY TUBERCULOSIS.

S. A. KNOPF (*Med. Journal*, 1897, *lxxvi*, 113) says that preventive medicine can no longer be called the medicine of the future, for it has become the medicine of the present. All the great advances made in the art of healing by the present generation of medical men have been in the direction of preventing rather than curing disease. Serotherapy, the latest and most marvelous attainment, by which we immunize, check further invasion of the micro-organisms, and neutralize their toxins when the disease has been already established, is preventive medicine indeed. And who will dare deny that before long we may be able to employ serotherapy successfully for all acute diseases?

Will it ever be possible to render an individual immune from tuberculosis by the injection of a tuberculin or serum as it is possible for us to do in diphtheria and variola? It is certainly not so yet, but these are not the only means to fortify the system against the invasion of disease. While consumptives, through ignorance and carelessness, may spread the germs of their disease everywhere, if the teachings of modern phthisiotherapeutics are followed, even the child of tuberculous parents may become a strong, healthy man or woman, and the accidental inhalation or ingestion of the tubercle bacilli will not suffice to make a consumptive of him or her.

It seems evident that the insufficient air supply to the respiratory organs and the increased susceptibility to the slightest change of temperature are the principal factors in the production of consumptive individuals. Therefore, to prevent or improve the condition caused by an insufficient air supply, we must resort to arotherapeutics, and to arouse the vasomotor system to a more energetic action we have in hydrotherapeutics not the only therapeutical agent, but, considering its salutary secondary effects, the most valuable one.

To prevent pulmonary tuberculosis we must begin with treating the child *in utero*, continue in the lying-in room, nursery, and schoolroom, and teach the young man or woman to keep the treatment up through life. The newborn child is in need of pure fresh air as much as the mother, and the lying-in room and nursery should always be well ventilated. When the child, in time, is taken for an airing, the thick, almost impermeable veil should be abandoned. These veils, often tightened around the little face, press against the nose and make it difficult for the child to breathe naturally, and the mother wonders why the baby got in the habit of

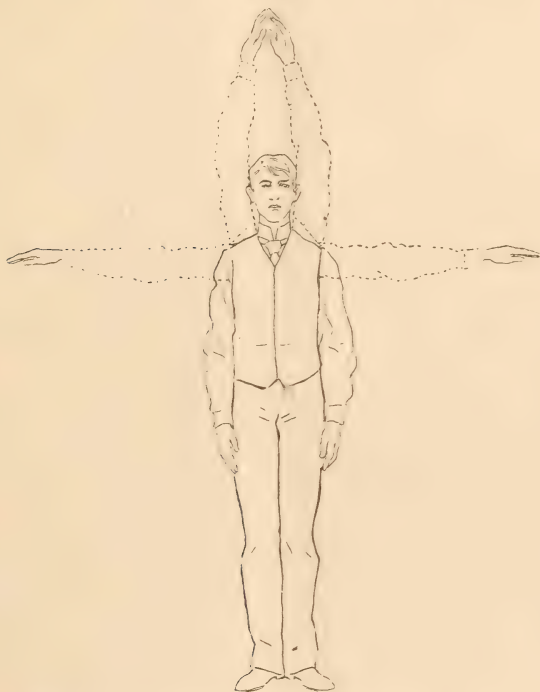


FIG 1.—First and second respiratory exercises.

breathing through the mouth. Not infrequently, also, the cause of mouth-breathing in children, and sometimes in adults, may be traced to the presence of adenoid growths in the retro-pharynx, or to enlarged tonsils, or to both. These, as well as all other possible obstructions in the nasal cavity, such as deviations of the septum, spurs, hypertrophied turbinated bones, polyps, etc., must be removed if we wish to protect the individual from chronic nasal, pharyngeal, and laryngeal catarrhs, the forerunners of so many pulmonary diseases. With a mechanical obstruction in the nose or naso-pharynx a natural physiological breathing is impossible, and only after the removal of all obstacles to a free and easy in-

halation and exhalation can we hope to derive real benefit from any system of aerotherapeutics.

As soon as the age and intelligence of the child will permit, breathing exercises should be taught him.

The following is a description of the exercises recommended to the chronic tuberculous patient able to walk about, to the anemic, the predisposed, and to all children and adults who breathe faultily.

The patient is taught to stand properly and to breathe always through the nose. He takes a deep inspiration slowly while raising the arms from the sides to a horizontal position, holds the breath for a moment and lowers the arms during the expiration, which should be somewhat more rapid. The second exercise is like the first, except that the upward movement of the arms is continued until the hands meet above the head. In the third exercise the patient stretches his arms out as in the position of swimming, the dorsal surfaces of the hands touching each other. During the inspiration the arms are moved outward and finally meet behind the back. They are brought forward again during the expiration. Each respiratory act should be followed immediately by a secondary forced expiratory effort. This is for the purpose of expelling as much of the supplemental air as possible, and may be effectually aided by supinating the arms and pressing the thorax with them.

If you consider that the amount of tidal air—that is to say, the volume which is inspired and expired in quiet respiration—is only five hundred cubic centimeters; the complementary air, the volume which can be inspired after an ordinary respiration, is fifteen hundred cubic centimeters; and the supplemental or reverse air, the amount which can be forcibly expelled after an ordinary respiration, amounts to twelve hundred and forty to eighteen hundred cubic centimeters, you can readily see the value of respiratory exercises and also the utility of this second expiratory effort. The fact that in the majority of cases the tuberculous process begins at the apices has been explained by the supposed bad inspiratory function of this part of the lungs. On the contrary, these portions of the lungs inspire excellently well, almost too well, for dust and all sorts of micro-organisms enter there most easily and are found in large quantities in careful post-mortem examinations. What is faulty is the expiratory function of the apices. A thorough expiration, followed by a forced expiratory effort as described above, is, to my mind, the only possible way to improve this defect and prevent stagnation and congestion, which, as is well known, form excellent media for the development of bacilli.

While it is true that whenever there are old pleuritic adhesions these extra respiratory efforts may cause moments of pain, the patient must bear in mind that these pains are not lasting and are in reality salutary, being caused by the loosening of the fibrinous bands.

By these breathing exercises the respiratory muscles become

developed, the process of hematosis is rendered more complete, and the increased respiratory function helps to dissolve the mucus and makes cough and expectoration more easy. More advanced and very weak patients must content themselves with deep but quiet respirations without movement of the arms. Placing a pillow under the back of these patients, so as to realize somewhat Sylvester's position, employed when artificial respiration is necessary, will be found a valuable adjuvant.

A persistent high temperature without apparent cause is often best treated by absolute rest in bed or on a reclining chair in the



FIG. 2.—Third respiratory exercise.



FIG. 3.—Respiratory exercise for persons with the habit of stooping.

fresh air. In such cases, as well as during acute attacks of inflammatory processes or active hemorrhages, it is perhaps best to suspend all respiratory exercises; but for those chronic, continued, bloody expectorations, due perhaps to a congestive process, regular breathing exercises act most beneficially. No less an authority than the great, immortal Traube was the first to prescribe this method for chronic hemoptysis.

For all patients alike the rules hold good never to take their breathing exercises when tired or immediately after a heavy meal; never to continue them to the extent of becoming tired; never to take them in a bad atmosphere; and not to take them at their caprice, but according to the directions of the physician.

CONTRIBUTION TO THE PATHOLOGY OF THE THYMUS GLAND.

FISHER (*Centralbl. f. Chirurg.*, 1897, *xvii*, 300) gives a description of a case of Hodgkins' disease in which the involvement of the thymus gland caused death, notwithstanding the performance of tracheotomy. The patient was a child five years old from v. Bergmann's clinic, and it is remarked that the primary disease, as well as the involvement in it of the thymus gland, has only rarely been observed at this age. He is of the opinion that a disease of the latter is hardly possible without involving the whole glandular system, and that we must not look upon the hyperplastic thymus gland as a cause of death, but rather as a partial symptom, perhaps also as the starting point of those general disturbances of nutrition which are further marked by enlargement of the lymphatic glands, the tonsils, etc. Siegel finds himself unable to accept this view, on the ground of a case operated on by Rehn and published by him, and believes a primary disease of the thymus possible; so also does he think himself compelled to look upon a hyperplastic thymus gland as a possible cause of death. A number of cases reported, especially by American physicians, endorse this view. The author adds a collection of numerous cases of disease of the thymus gland from literature.

TWO GIRLS WITH PIGMENTED NEVI OF EXTRAORDINARY DIMENSIONS.

These cases were exhibited by Prof. Hebra to the Vienna Surgical Society (April 30, 1897). One of these, six years of age, is the tenth child, and all of her sisters and brothers, as well as her parents, are said to be well formed, and free from any similar abnormality. It was authoritatively stated that at the child's birth there was an absence of epidermis in those localities which are now remarkable by their dark color and growth of hair, and that numerous fleshy warts were present which were easily made to bleed; at this time no extraordinary growth of hair was present, and the latter was said to have developed only three months later, and accompanying it a deeper pigmentation took place, which continued to increase from that time. Now a portion of the right half of the scalp, nearly the whole right half, and a large part of the left half of the face is evenly pigmented and of a dark brown color. Interspersed we find round and oval patches of the same dark color of the size of a pea to a hazelnut. The pigmentation continues uninterruptedly over the whole upper portion of the body, though it is not in all parts evenly developed, for we can discover on the one hand some lighter spots, especially on the back at the lower border of the scapulæ, and on the other numerous small and large darker colored spots, in the general dark-brown pigmentation. The pigmentation

ceases in the left arm at the line between its middle and lower third; on the right side it reaches to the upper third of the forearm. The rest of the surface, which consists of perfectly normal white skin, is covered with numerous small disseminated patches, some of which occupy one-half of the extremity. The palmar and dorsal surface of the hand is also covered by them, but the fingers, with the exception of the left index finger, are normal, the latter is of a brown color from the middle of its metacarpal region to its tip, the color shading off in intensity in that direction. The lower extremities, which have a somewhat rhachitic curve, are covered with many small as well as large dark patches encircling the limb half way, and are met with both on the volar and on the plantar surface of the foot. Aside from the pigmentation, the portions mentioned are all somewhat raised above the surface of the skin; some, as, for example, the smaller ones, only slightly, others more markedly, and particularly elevated are those plaques which encircle the extremities. In part the elevated surface is smooth, and again, especially on the right half of the face, it is covered with warty excrescences and longitudinal folds. Finally, all these dark portions are more heavily covered with hair. In some localities, especially on the forehead, both cheeks and the arms, on the buttock, in the sacral region, the hairs are a few cm. long; on the lower extremities they are somewhat shorter; they are shortest on the trunk, on the abdomen and on the back. The child is perfectly well formed, intelligent and quite lively, excepting the slight rhachitic curvature of the legs. Dentition took a natural course, and no abnormalities of the teeth are present. The other child, which is eleven years of age, has also three normal brothers and sisters and well formed parents. The child itself is proportionately developed and possesses pretty features. We observe only one extensive pigmentation here, which occupies the whole abdomen, from the lowest rib to the inguinal region, and it extends towards the back. The color is a deep dark blue black, in contradistinction to the more brownish coloration of the other pigmented parts. An excessive growth of hair is not present in this case, lanugo-hairs only being present. Besides this extensive pigmentation, there are present innumerable smaller pigmentations varying from the size of a pea to that of a nut, which are scattered over the whole body; these are all devoid of excessive hair growth, except in those parts which are normally covered with hairs. Thus we find the median hair of both arches of the eyebrows, each occupied by a large black nevus, of the size of a penny, from which dark hairs one inch in length are growing. The extremities present, as in the first case, large stripe-like pigment plaques which encircle one half the circumference of the limbs, only that these are not as greatly developed as in the

former case. These monstrosities are to-day referred to atavism. The larger spotted and striped pigment plaques may be compared to the spots of normally dappled animals, and to the stripes carried by the zebra, where we meet with a still greater similarity in that the stripes of the latter are also somewhat raised above the normal level. The statement that the affection in the six-year old girl had developed after birth is not contrary to experience, the author being cognizant of cases proving that similar pigment plaques, though much smaller in number and extent, may make their appearance in later years.

CONTRIBUTION TO THE STUDY OF HYSTERICAL AFFECTIONS IN CHILDREN.

FERD. STEINER (*Jahrb. f. Kinderheilk.*, 1897, *xliv*, 187) says that hysteria was known by Sydenham to assume the mask of any conceivable disease; in a letter to Guillaume Cole (1681) he writes: "Hysteria simulates nearly every disease; for in whatever part of the body it finds its seat, it will cause symptoms which are characteristic for this site, and should the physician lack great penetration and experience, he will easily be deceived and assume the presence of a local disease of the part, although all the symptoms are due to hysteria."

The first cases of hysterical pseudomeningitis date from the beginning of the last decennial, and were published by Sollier and Ollivier. According to our present experience, this peculiar combination of hysterical symptoms may begin in various ways. At one time a sudden attack of headache and vomiting may occur, at another, as in the prodromal stage of a meningeal tuberculosis, an inexplicable, long continued vague complexus of symptoms may appear; moodiness, depression, bashfulness, increased sensitiveness to external impressions, poor appetite, insufficient stools, slight headache, etc. After some time, perhaps days or weeks, the symptoms disappear, and are followed by seemingly good health, or else they are more distinctly in evidence, imitating meningeal seizures. Headache becomes most prominent and is the ruling symptom; it is due to hyperesthetic, later to hysterogenetic, zones in the scalp, which should always be searched for.

Photophobia, temporary strabismus, double vision, paralysis and contractures follow. Retardation of the pulse (48 to the minute) is not infrequently met with, but it was never found, with the exception of one case, to be irregular. Hyperesthetic stigmata, Trousseau's points and lines, vomiting and constipation complete the picture. In many cases fever is absent, the highest temperature found by most observers was 38.6° C. with the exception of one case (Bruns), where it was found to be 39.2° C. Chantemésse, in his work (p. 75), has sketched the differential diagnosis in the following words:

“The manner of its appearance, the gradual development of the symptoms, which, in their totality, nearly simulate the picture of a tuberculous meningitis, the intense cephalalgia, the vomiting, the double vision, the delirium, the slowing of the pulse-rate, the so-called *tache méningitique*, the persistent constipation, all seem to point to tuberculous meningitis. Only the knowledge of the child's previous history, the presence of marked disturbance of the sensibility, which can only be accredited to hysteria, the temperature remaining within the normal point, permit the assumption that a neurosis is the real cause of the symptoms; aside from this, we must maintain a wise conservatism in regard to the diagnosis.”

Since then Gilles de la Tourette and Chatelineau have shown that the hysterical paroxysms exert an influence on the chemical composition of the urine, revealing their true nature by a diminution in the quantity of urates and of solid deposits, and by a change in the relation of the phosphates. Chantemésse made use of this discovery (1891) in a case in which the diagnosis was undecided between atypical and tuberculous meningitis, and found that at the time of the paroxysms of headache the relation between the earthy and the alkaline phosphates was 92:100, 83:100, 73:100, while during the time in which headache was nearly absent the relation was 55:100, or 53:100. He therefore adds: “The analysis of the urine put me in the position to recognize hysteria as the true cause from the first day of the disease.”

Palpitation of the heart, as a symptom of hysteria, is quite frequent; hysterical tachycardia, however, is, according to Hirsh, less frequent, and is never very severe; at all events, it is met with more frequently than a slowing of the pulse. Irregularity of the heart, during its increased action, has already been noted by Canstatt. The pulse-beat is frequently irregular, in quick alternation, first rapid and again slow.

Hysterical forms of paralysis are characterized by their frequent remissions, both in degree and extent. The facialis, according to Eichhorst, enjoys a certain immunity; as a rule, it is not involved.

Hysterical paralysis of the ocular muscles is rare. Gilles de la Tourette expresses himself as follows: “It may be said of the muscles of the eye as well as of those of the face, that it is possible to produce a paralysis by suggestion, but that spasm is always present.”

Hysterical blepharospasm is certainly of frequent occurrence; it is said to be occasionally the only symptom of a rudimentary form of hysteria, especially in childhood. If it be chronic it is characterized by blinking; if tonic and at the same time fully developed, its recognition should not be very difficult, especially as the upper lid appears strongly furrowed, from the contraction of the orbicularis. Should the tonic spasm of the

lid however be only partial, thus presenting a weaker form, the picture is frequently difficult to distinguish from a paralytic ptosis; these forms of blepharospasms have been described by Parinaud as ptosis pseudoparalytica.

Charcot has pointed out an important symptom in the differential diagnosis, which is easily recognized objectively, and which enables one rapidly to discriminate between spasm and paralysis, namely the lower position of the eyebrow on the side of the spasm; contrarywise the eyebrow in ptosis on account of paralysis is situated higher up on the diseased side than on the normal, a discovery which has been corroborated by Landolt.

Concomitant nystagmus, which according to Sabrazès may be of a hysterical nature, is certainly according to Parinaud in favor of spasm, but a paralysis of the rectus internus may directly favor a spasm of the externus.

Ovaria, a name introduced by Piorry (1837) and Schutzenberger (1846), has been accepted by Charcot, meaning by it that a pain actually is present in the ovary. Bricquet on the other hand has already relegated the pain to the muscles of the abdomen, especially to the obliquus internus, and considered it a myodynia, to which he gave the name of coelialgia. Although in the male orchialgia in a strict sense takes the place of ovarialgia, observations of a viril ovaria are not sparse, and besides this case, Henoeh has observed it in a boy ten years of age, and Seeligmuller in one four years old.

The author reports another case of hysteria in a girl eight and a half years old, with the following comment: This case seemed worthy of record on account of the well defined hysteroleptic attacks, which as a rule are not often met with in children. On the contrary, extensive convulsive attacks are extraordinarily rare in infantile hysteria; more frequently do we meet with partial convulsions, for example, crying-spells, which hysterical girls are particularly liable to contract from an hysterical mother (infection by imitation); also screaming spasms; there are certainly children who begin to shriek dreadfully from comparatively trivial causes, and are unable to control themselves for a long time, and when they do, are unaware of the crazy spectacle they have presented. From these cases we must of course exclude those badly raised children who are self-willed and malicious, and yell from sheer cussedness. *Chorea laryngis* is another form of hysteria which is liable to attack childhood. Hasse as well as Herz number this affection under hysteria.

Sensitiveness to pressure on the vertebræ seems in general to be one of stigmata of infantile hysteria most frequently present. Rhachialgia is most decidedly present more often than pain in the hypogastrium on pressure; the latter was found less frequently in hysterical children than in adults.

Hyperesthesia, as well as disturbances of sensation, is less clearly marked in childhood, and is not infrequently confined only to the volar surfaces of the hands and feet. It may even be absent altogether. At all events hyperesthesia is more frequently observed in children than anesthesia.

Anesthesia is rarely general, more frequently unilateral. As a rule however it seems to occur disseminated in children, and its seat at the same time does not correspond to the course of the nerves (Charcot); the upper extremity seems to be the most favored location in children. Another case described by the author was a peculiar kind of paralysis of the muscles concerned in swallowing (*schlucklähmung*). The child eventually recovered.

The course of infantile hysteria is more rapid than that of the adult (Seeligmüller). Charcot finds a transitory character of infantile hysteria to be the rule. Gilles de la Tourette believes infantile hysteria to be curable and the prognosis to be favorable. Henoch considers the prognosis more favorable than in the adult. The great number of cases of hysteria seen in children by the author during the past four years took a comparatively favorable course.

As regards *treatment* and *prophylaxis* it was found that isolation of the hysterical child is to be considered a great and speedy factor in hastening the cure, perhaps even more so here than in the adult. If isolation cannot be carried out, it will be necessary to insist on a change of residence; a short sojourn in the hospital has proved of extraordinary benefit. Prophylactic measures are only to be found in hygienic education. A great mistake in modern education may be particularly mentioned here. The child should be taught to mind absolutely, it must be taught to subordinate its own will to that of the parent. Senator emphasizes the fact that hysterical children do not possess the inhibitory influence of the will which healthy children should possess, and Gowers says: "A child that is always allowed to do as it pleases, without having its self-will antagonized, will never in later life be able to exert any self-control."

STREPTOCOCCUS-CROUP OF THE TRACHEA IN SEPTIC SCARLET-FEVER.

D. POSPISCHILL (*Jahrl. f. Kinderheilk.*, 1897, *xliv*, 231) says that the very slight inclination of diphtheria of scarlet fever to invade the larynx is unanimously admitted.

Henoch has reported eight cases of scarlet-fever diphtheria which invaded the air-passages in the Charité Annalen, 1876. The trachea was always found free from it at the autopsy. During life all cases presented hoarseness or aphonia, and in the majority of cases great dyspnea was present. Heubner reports a case of scarlet-fever which presented hoarseness,

stenosis with the head extended, a livid exanthem and high temperature on the sixth day. At the autopsy the larynx was found covered with a yellowish-gray, thin membrane, extending 3 cm. into the trachea, and the mucous membrane lying beneath it already seemed infiltrated to the naked eye.

Leichtenstern¹, reports cases of scarlet-fever complicated with diphtheritic processes in the larynx (on the mucous membrane of the epiglottis, the aryepiglottic folds, and the true vocal cords), and insists that scarlatinal tracheo-bronchitis is nearly without exception a catarrhal inflammation. With the discovery of the bacillus of diphtheria, a sharp separation of the scarlatinous affections of the pharynx from true diphtheria and the demonstration of its frequent combination became possible. Croup of the air-passages as a sequel of scarlatina was then considered as a secondary infection by diphtheria. Since then, cases of coccus-croup (partly caused by diplococci, and partly by streptococci) have been described, but not one as yet occurring with scarlet-fever. It would seem as if this disease in which the grave symptoms of general infection or intoxication as well as the local complications are based on an infection by streptococci, would furnish the most favorable soil for its appearance. Here follows the minute report of a case, which the author claims to have been the only one among the many septic cases of scarlet fever occurring during the last three years at the St. Anna Children's Hospital, complicated by a stenosis of the trachea. "The mucous membrane of the larynx is pale," was reported at the autopsy. The larynx remaining free, distinguishes this case from the usual form of stenosis in severe scarlet-fever, in which the necrotic inflammation of the pharynx extends to the larynx and the upper part of the trachea, similar to the pseudo-diphtheritis of septicemic origin in the new-born and infants at the breast, described by Epstein. The exuded membrane in the trachea is loosely adherent; this was not, like the pharynx, the seat of necrotic processes; it rather looks as though it was due to a process which ran its course independently in the trachea, having no connection with the pharyngeal necrosis. Aside from edema of the glottis, stenosis of the larynx (more rarely also tracheal-stenosis), if it is not due to a secondary infection with true diphtheria, belongs only to the severe septic form. It consists in the continuation of the pharyngeal-necrosis to the larynx and trachea. The dyspnea of that form of severe scarlatina which ends fatally in a few days from a grave general infection has its cause mainly in the degeneration of the heart-muscle and the changes in the blood; its cardinal symptom is cyanosis.

When life has been prolonged into the second week, in a case of lesser infection, dyspnea is mainly caused by changes

¹ Deutsche Medic. Wochensch., 1882.

in the respiratory tract, and makes itself known primarily by symptoms of stenosis or increased frequency of respiration.

ON TUBERCULOUS PERITONITIS.

BULIUS (*Munch. Med. Wochensh.*, 1896, *xlili*, 1032) says that the favorable results obtained by laparotomy in tuberculous peritonitis have markedly increased the importance of the diagnosis of this disease. We find many different forms, in a pathologico-anatomic sense, which also give us different symptoms clinically; we find general effusions, as in ascites, sacculated effusions, firm tumors with or without accompanying ascites, and finally no effusion at all, or only a very small one. The peritoneum is soon covered by tubercles of the size of a pin's head to that of a lentil; sometimes these are only found in the most dependent portions, and in the immediate neighborhood of the primarily involved sexual organs; again they are altogether absent. The nodules have a firm consistency, are attached loosely to the peritoneum and are perfectly movable. They must not be mistaken for swollen lymphatic glands, which have their seat usually in the arteria sacro-iliaca only, nor for the nodules of carcinoma of the various organs of the abdominal cavity, which attain the size of lentils or beans, and are frequently of the consistence of marrow, nor finally for small papillary nodules, which are found in the peritoneum as metastases in papillary cystomata of the ovaries. The finding of the tuberculous nodule is not very difficult, as a rule, and can be accomplished in most cases without anesthesia. A rectal exploration however is necessary. In performing this we must penetrate above the sphincter ani tertius, to palpate the ligaments thoroughly. The seat of predilection in a small number of cases will be found just behind the ligamentum latum, at the posterior wall of the uterus, and behind it on the lateral wall of the pelvis.

For an explanation of the nodules we may also study the previous history: Heredity, tuberculosis of some other organ, disease of bones and lymphatic glands, recurrent inflammation of the lungs, all these may furnish us with valuable data. A continued evening rise of temperature is a suspicious factor.

Tuberculous peritonitis follows a tuberculosis of the intestine or the sexual organs, in by far the greater number of cases. In the discussion on this subject Baumler pointed out the frequency of tuberculous peritonitis in childhood. Besides pallor, anorexia, irregular stools, and sometimes pain in the belly, an enlarged abdomen containing a little fluid, and slightly tender to pressure, is very often met with. The effusion may disappear in the course of a few weeks from simple rest in bed. The author has seen a case which was cured simply by repeated puncture. He believes that the favorable results of laparotomy are due to the sudden change in the circulation.

THE ETIOLOGY OF MELENA.

N. SWOBODA (*Wien. Klin. Wochensch.*, 1896, ix, 916). A true melena hemorrhage from the blood vessels of the gastro-intestinal canal of the new-born is easily simulated by the abundant evacuation of bloody stools and coagula from the intestines and stomach, due to a severe hemorrhage from the nose and throat. This warning was illustrated by the report of four histories:

1. Hemorrhage, due to blennorrheal infection of the nose, ulceration, septic hemophilia.

2. Hemorrhage from nervous congestion, due to an intracranial hemorrhage.

3 and 4. Hemorrhage following diphtheritic infection in children congenitally syphilitic (whose particular disposition to severe diphtheritic disease is pointed out here).

In the two last cases the profuse hemorrhage was only noticed on the posterior pharyngeal wall. Neglecting the examination of the nose during life, and later nearly always its section at the autopsy, leads to this mistake.

Ulcer of the stomach and duodenum may be further reasons for mistake. Syphilitic sepsis, Buhl's fatty degeneration, also softening processes and erosions of the mucous membrane of the stomach following injuries of the brain, may present the picture of a melena. It is only after a varied and thorough examination that we should report a "negative finding."

Goerl, as an addition to this case, then reported one of typical paroxysmal hemoglobinuria occurring in a boy five years of age. This made its appearance accompanied with belly-ache and chills, with no rise in temperature within half an hour after exposure to cold. The urine did not contain albumin, nor casts, but by means of the spectroscope methemoglobin was discovered. The child does not show Hutchinson's signs, although the disease was of a syphilitic character, as was shown by the good results obtained from iodide of potassium and by the previous history (the father of the patient having been subjected six years previous to two courses of inunction.)

ARTIFICIAL DIPHTHERIA ANTITOXIN.

SMIRNOW (*Arch. des Scienc. Biolog.*, St. Petersburg, iv, 5), starting with the idea that all organic physiological processes are processes of oxidation and reduction, and that bacteria promote this identical change in culture media, conceived that a curative serum might be made from normal serum by simple chemical processes. He therefore has for the present conducted electrolytic experiments with common serum. When he found that no results were obtained in this manner, he mixed together diphtheria serum and bouillon containing the toxins of diphtheria, and passed a current of forty-five

milliamperes for seven hours through this mixture in a suitable apparatus; the chlorine freed from the sodium chloride, enters into combination, with the peptones of the bouillon at the positive pole by the addition of caustic potash, and by exchanging the carbon electrode for one of silver, the chlorine is attracted to the silver. After five to six hours a portion of the liquid near the positive pole is syphoned off, freed from the silver and filtered. The antitoxin obtained in this manner is alkaline, and so concentrated that 0.5 to 1.0 ccm. are sufficient to protect a guinea-pig in sixteen to eighteen hours from the effects of an injection with a virulent culture which would kill a control animal in thirty hours. The advantages of this artificial antitoxin are its freedom from poison and harmlessness, its rapid manufacture and great cheapness, while its curative value in the early stages of diphtheria is equal to, and in later stages is greater than that of the natural antitoxin. He, through his experiments, comes to the following conclusions: Antitoxin is an oxydized toxin; the electric current does not really produce an antitoxin, but the latter results from the action and reaction of the organic substances contained in the diphtheria culture, and the products of electrolysis. He intends to continue these experiments so as to include also tuberculosis.

A CASE OF MALIGNANT PEMPHIGUS IN A SIXTEEN-YEAR-OLD GIRL.

ARNING exhibited the case to the Hamburg Surgical Society (*Münch. Med. Wochenschr.*, 1897, *xliv*, 212). The following three points speak for its malignancy:—Early involvement of the mucous membranes in the formation of the pemphigus bullæ, which was present in an extensive form in this case on the conjunctivæ; an inclination of the papillary bodies within reach of the individual efflorescences, to form new growths, the formation of vegetating forms; very marked vulnerability of the skin, a rapid formation of bullæ from a slight irritation of the skin. The treatment consisted in the administration of large doses of quinine, with seemingly good results.

ON THE PRODUCTION OF DIPHTHERIA-ANTITOXIN AND THE ESTIMATION OF ITS STRENGTH.

RUETE (*Münch. Med. Wochenschr.*, 1897, *xliv*, 213), in his introduction, remarked that there were two kinds of serum, bactericidal and antitoxic. Diphtheria serum represented the antitoxic form, which was proved by the fact that the growth and virulence of a diphtheria culture were not changed by the addition of serum. For the production of serum there are necessary: 1. Virulent cultures. 2. A proper culture medium.

3. Proper horse-material (animal material in general). Virulent cultures cannot always be obtained from clinically "intense" cases of diphtheria; those cultures are found to be most virulent which are recognized under the microscope as small rods, only slightly club-shaped. With these colonies raised on a solid culture-medium, the thinnest possible film of bouillon is inoculated. The reaction of the bouillon also is quite important; an acid reaction will prevent the formation of toxins but a neutral or slightly alkaline reaction is favorable to it. Alkalinity may be obtained by the addition of small pieces of marble, or better still by allowing the meat from which the bouillon is to be made to lie for some time until the acid reaction has disappeared. The bouillon-culture is ripe after nineteen to twenty-one days, and is then filtered through asbestos: to the filtrate is added a 0.2 per cent. of trikresol. The strength of the toxin obtained in this manner is tried on the guinea-pig. The experimental animal should succumb within a certain time to a certain dose; autopsy should then reveal the characteristic changes of diphtheria (particularly the reddish-brown discoloration of the supra-renal capsules). As a suitable horse-material he takes strong dray-horses from Hanover, five to twelve years old, and immunizes these at first with 0.01 cm. of toxin. Four days afterwards, and later at still shorter intervals, the immunizing injections are repeated, and the toxic dose increased, according to the degree of reaction obtained by the dose of the toxin. The toxin-dose borne by the animals becomes finally astonishingly large. It is perfectly independent, however, from the value of the serum which is later obtained. Not all horses bear immunization, some succumb to marasmus, others die rapidly from degeneration of the heart-muscle, still others are afflicted by the formation of multiple abscesses within the area of the injections and then go on to pyemia; only some, therefore, are suitable for obtaining the antitoxic serum. The blood is taken fourteen days after the last injection of a large dose of toxin. The serum, which is obtained sterile, is treated with a one-half per cent. solution of carbolic acid to destroy any germs which may have possibly reached it through the air, by which a slight turbidity (due to the precipitation of albumin) is caused.

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CONTRIBUTIONS OF BACTERIOLOGY TO THERAPEUTICS.

THE WESLEY M. CARPENTER LECTURE FOR 1897.

By

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THE subject of the essay this evening will be considered to be broad enough to cover not only the contributions of bacteriology to therapeutics in diseases where the specific micro-organisms are known, but also in those in which, though as yet undiscovered, we believe them certainly to exist.

That we may be able to estimate correctly the results obtained in the treatment of individual diseases, let us review briefly the facts already established, and some of the theories advanced to explain the means through which bacteria as a class produce disease, and the living body strives to protect itself.

Bacteria may be considered to cause disease either by their mechanical presence in the tissues, by the poisons produced by their growth, by the withdrawal from the body of necessary food substances, or by other ways as yet unknown.

Although micro-organisms probably cause injury in all of these different ways, still they are now believed to cause it chiefly by the reaction upon the body cells of the poisons they elaborate from the tissues in their growth.

Each variety of bacteria probably produces one or more specific as well as general poisons. These in some instances have been partially isolated and studied, as in tetanus and diphtheria.

Bacteria, neither in the living body nor outside of it, can develop and increase in numbers without changing the substances upon which they grow. Outside of the body this activity results in fermentation, putrefaction, etc., inside the body in disease.

Although, as we shall see, many complex factors influence the degree of the susceptibility of the body to infection from any germ, nevertheless the most important, and perhaps all-embracing, one is whether or not the body at the time and place of infection is in the proper conditions for the growth and activity of the organism, for without the existence of one of these conditions no micro-organism can produce disease. The living body is certainly not a good soil for most bacteria to grow in, even after they have penetrated the outer protecting shell of skin and mucous membrane. The reasons for this are, however, only partly discovered.

While it is true that the body temperature and the concentration of food stuffs in the blood and tissues render them unfavorable for the growth of many forms of saprophytic bacteria, nevertheless these conditions are not unfavorable for the growth of most pathogenic varieties and can hardly be thought to explain the great variation in virulence between different varieties of the same species. Thus if one single streptococcus of a very virulent culture is deposited in a rabbit's tissues it reproduces itself a million fold in a few hours, and kills by septicemia in twenty-four hours. While a million streptococci from another culture, injected all at once, will die instead of developing. Both these cultures will grow, however, equally well in the serum after its removal from the body. We must therefore add to the other factors influencing growth qualities possessed by the tissues which belong to them only while they remain alive.

Protection against infection exists in different degrees in the same individual toward different bacteria and among different individuals towards the same bacteria. It may be either natural or acquired.

Long before bacteria had been detected it had been

noticed that different races of men, and even individuals among the same race, varied in being more or less susceptible or refractory to different diseases. It was also noticed that persons were not apt to contract certain diseases twice, at least not within a short period of time.

The causes of this immunity, natural or acquired, are still only partially understood. If we inject a few virulent anthrax bacilli into a susceptible animal, we find that very soon the bacilli begin to increase, cause a local swelling, then fever, severe illness and death. If we infect an animal of the same species which has been previously immunized the bacilli not only do not increase but soon die, and so no disease develops.

In seeking for the reasons for the different action of the bacilli, it was found that in the non-immunized animals the bacteria after their injection developed unhindered by any action of the cells or fluid substances, while in the immunized animals certain cells were attracted to them, and that these cells later absorbed and destroyed them. A recent piece of work by Mennes upon pneumococcus infections would seem to show that this attraction of the leucocytes for the bacteria was not wholly due to any inherent properties of the leucocytes, but rather to the effect of substances in the serum on the leucocytes, for he found that when pneumococci were added to non-immunized serum to which leucocytes from immunized blood had been added no phagocytic action took place, but that when leucocytes from either immunized or non-immunized blood were added to immunized serum they attacked the bacteria. Besides this action of the cells the blood probably contains substances directly bactericidal. In addition to the substances, we know that antitoxic substances are developed in the blood. As to the nature of the action of the toxin and antitoxin upon each other there has been much curious speculation. As a working hypothesis the following is given; it is a slight modification of that given by Knorr.

We may consider that a toxin is a substance which is directly poisonous according to the intensity of its affinity for the cell substance of any living body.

Thus the cell substances of a chicken, which can withstand enough tetanus toxin to kill 30 horses without effect, but which can still be affected by larger doses, may be considered

to have 10,000 times less attraction for the toxin than that of the horse.

If we consider further that the toxin has even a stronger affinity for the antitoxin than for the cell substance, we can explain how its affinity becoming satisfied it no longer injures the cell. Its poisonous power is thus neutralized.

An antitoxin can, in my opinion, be best conceived as a toxin which has been changed by its contact with the living cell substance, either within the cell or outside of it. The antitoxin may have been changed by uniting with a portion of the cell substances or may have been simply acted upon by it.

Others consider that the antitoxin is secreted by the cells, the toxin simply acting as an irritant, and that the antitoxin also acts upon the cells, rendering them insusceptible to the poisonous action of the toxin.

It is difficult for me to conceive that cells are so constituted as to have the power to produce in response for each irritant a specific antitoxin. If, however, we consider the antitoxins to be toxins altered by contact or union with the cells this specific quality is easily explainable.

As neither toxins, antitoxins, nor bacterial poisons have ever been obtained in a chemically pure state and analyzed, and as an antitoxin can not even be separated from a toxin by chemical means we will have to remain satisfied to theorize for some time to come.

Antitoxins do not remain permanently in the blood but are gradually eliminated through the various organs. So that after a few weeks or month they completely disappear.

As we do not know the nature of the micro-organisms which cause small pox, syphilis, etc., the immunity which follows after their occurrence, is naturally as yet not clearly understood. Some days after the infection the blood does contain immunizing substances, but these are very weak, and it seems difficult to attribute to them the long duration of the immunity. However, when we remember the long persistence of the infectious period in syphilis, it is not impossible to imagine that somewhere in the tissues of persons who have recovered from other diseases where protection is most lasting there remain micro-organisms, encysted, perhaps, which directly or indirectly cause the production of protecting substances.

Bacteria differ greatly as to the portion of the tissues in which they can develop, and, therefore, in the manner they produce infection. Thus, a few tetanus bacilli are driven by a splinter into a wound in the foot, they multiply but slightly, but they find the soil suitable for the production of, and absorption of, sufficient toxin to kill within a few days. The same bacillus, swallowed, finds no soil in the mucous membranes suitable to grow in, nor absorb its poison, and, although it develops in the intestinal contents, is therefore harmless. The cholera spirillum, on the other hand, swallowed, develops in the intestine and produces disease; carried by the splinter under the skin it is harmless. The bacillus of diphtheria requires still different conditions. It is practically harmless in the intestines, under the skin or in the blood, but lodged in the throat mucous membranes it produces diphtheria.

The bacteria differ as markedly in the rapidity in which they produce disease. Thus, the tetanus bacillus kills quickly by its toxin, the tubercle bacillus invades the tissues slowly, and month after month destroys portions of one or more organs before finally causing death or even serious symptoms.

There are certain general factors which temporarily affect the susceptibility or resistance of the living organism. Thus clinically, as well as bacteriologically, we know that lack of food, exposure to heat and cold, over-exertion, extreme youth, old age and other influences, predispose to disease, while the opposite conditions help the body to protect itself.

These conditions affect us in relation to all diseases and will, therefore, not be spoken of in connection with the specific remedies under each disease.

In the diseases to be considered to-night we have to examine in each whether, by means of the toxins or poisons which the bacteria produce, or by means of the living cultures, or of the ground up elements, or expressed juices of virulent or non-virulent bacteria we can obtain in animals immunity, and whether in such animals the blood contains at any time substances which are sufficiently antitoxic or bactericidal to give immunity when transferred into the bodies of others. Further, we have to decide in each individual disease, what length of time can elapse from the date of the infection or the development of the symptoms, in which the serum will still be able to prevent the development or arrest the progress of

the disease. Let us now take up in detail a number of infections, considering in each the progress made.

Tetanus.—Since the advent of aseptic and antiseptic surgery, tetanus has become less common after surgical operations, but it is still fairly frequent after lacerated wounds, especially after childbirth. In New York City, according to the vital statistics, there are about six cases per year of idiopathic tetanus, and 40 per year of tetanus neonatorum. The actual number of cases has remained stationary, but the number relative to the population diminished. The treatment of tetanus is still, therefore, of practical importance. In the following remarks I have frequently drawn from a recent and excellent article upon the study of tetanus and its treatment, by Dr. Alexander Lambert (*N. Y. Med. Journal*, June 5, 1897).

The tetanus bacillus is now accepted as being the cause of all the various so-called forms of tetanus, such as puerperal tetanus, tetanus neonatorum, idiopathic, rheumatic and traumatic tetanus. To produce the disease there must always be some wound in which the bacillus finds lodgment. Concerning the bacillus itself it is important to remember that in one stage of its development it contains a very resistant spore.

The Occurrence of Tetanus Bacilli in Nature.—Since Nicolaier, in 1884, discovered and identified the tetanus bacillus as the cause of tetanus, the bacilli have been found to be exceedingly common inhabitants of the soil. They have also been found in many different substances and places—in hay dust, in horse and cow manure, in the air, etc. The spores are very resistant to external influences. Henrijean, by means of a splinter of wood, pieces of which had once caused tetanus, was able after eleven years to again cause the disease by inoculating an animal with a piece from the same splinter. The growth of the tetanus bacillus in the animal organism is comparatively scanty, and is usually in association with other germs. It remains at the seat of infection, and does not spread through the body. The disease is, therefore, a true toxemia.

The increase in our knowledge concerning the bacteriology of tetanus has contributed greatly to establish proper methods of local treatment.

The infection, as it occurs in practice, can be considered in the majority of cases as an infection with tetanus spores.

These spores require favoring circumstances to develop. If we remove these favoring elements we render the germs harmless. Thus, in regions where tetanus is prevalent, early and thorough cleansing of all wounds, however insignificant, becomes of more than the usual importance. Tetanus may, and often does, arise from wounds so insignificant that they are healed and forgotten before even the first symptoms of tetanus develop.

Disinfection.—Our ordinary disinfectants or antiseptics must here be considered from a different standpoint than is the case in ordinary surgery. Such disinfectants must be used as are not only antiseptic, but also antitoxic, that is, not only destructive to the micro-organisms themselves, but also destructive to their toxic products, for the toxins in the tetanic wound are almost as great a source of danger as the tetanus bacilli themselves. In some cases where the parts are extensively lacerated and difficult to cleanse, amputation should be performed.

Since the first experiments of Kitasato numberless animals have been immunized against tetanus infection by the production in their blood of a powerful antitoxin but of no bactericidal substances. After repeated injections of tetanus toxin the blood of horses contains such a quantity of antitoxin that such small amounts as one-millionth of a cc. when injected into a guinea pig will give an immunity against a fatal dose of poison or bacilli. This immunity will last for from two to four weeks, until the antitoxin has become eliminated.

Tetanus antitoxin has been applied practically upon a large scale in immunizing animals against possible infections.

Thus our Diphtheria and Streptococcus horses, which are receiving frequent hyperdermic injections, run a considerable risk of acquiring tetanus. During 1895 we lost several very valuable animals. Since then all our experimental animals are immunized from time to time with 30 cc. of tetanus antitoxin, and we have had no more tetanus. This same expedient is employed by others with equal success.

Many give all horses which are to be operated upon a protecting dose.

Similar injections should be given to men when they receive lacerated wounds or undergo severe operations, in localities where tetanus spores are prevalent and the disease not in-

frequent. In suspicious wounds a second injection should be given two weeks after the first, to prevent the immunity passing away before all danger is over.

The power of the tetanus antitoxin to neutralize the poison before it has affected the cells is marvelous and certain, but after the cells have been injured it is slight and uncertain. The results of treatment are not so brilliant as in immunization. When the symptoms of tetanus first show themselves, the cells have frequently been too profoundly affected to receive any help from the neutralizing power of the antitoxin.

We find that if we insert a splinter carrying some tetanus spores, symptoms will develop in from one to five days. Usually, until the symptoms appear, the animal can be saved by an injection of antitoxin, but after the appearance of the first tetanic symptoms the antitoxin is, as a rule, useless. Sometimes, however, it will save when given a few hours after the first symptoms have developed.

In the larger animals, I have seen a number of cases of acute tetanus treated by antitoxin. None of them were saved. In man much the same results are obtained.

Cases which develop symptoms within six to eight days and run an acute course of 48 to 72 hours, usually show no results from antitoxin treatment. Those, however, having a longer incubation period and tending to a more subacute course are probably greatly benefited by the antitoxin. Dr. Lambert, in the statistics he gathered, found that in thirty-one acute cases developing within eight days of the time of infection, there was a mortality of $61\frac{1}{3}$ per cent., while among similar untreated cases the mortality is considered to be as high as 80 per cent. In cases of long incubation and slow onset of symptoms the mortality under antitoxin in forty cases was but 5 per cent., while in similar cases without antitoxin it is considered to be as high as forty per cent.

Judged by these statistics, made, it is true, from a small number of cases, antitoxin seems to have positive curative effect in the less acute cases of tetanus.

As it is impossible to tell at the outset which cases are capable of benefit, it seems wise, along with the usual treatment, to give antitoxin in doses of twenty to fifty cubic centimeters twice daily in all cases of tetanus, and to begin the treatment at the very earliest possible moment. At the same

time we must remember that many of the acute and in some of the less acute cases, especially where it has not been given early, absolutely no effect will be manifested.

Diphtheria.—Since Behring's first announcement the antitoxic treatment of diphtheria has been so frequently and so fully treated in numberless publications that I will only dwell on a few points which seem to me of special interest.

Diphtheria antitoxin is singled out among antitoxins by its success in the treatment of diphtheria as vaccine is among viruses in its prevention of small pox. The blood of animals subjected to injections of diphtheria toxin is antitoxic but not bactericidal.

The great mass of physicians, especially those of the greatest experience, are, at the present time, convinced that diphtheria antitoxin in doses of two hundred to three hundred units will confer immunity against diphtheria for from two to four weeks, and that the period can be lengthened at will by repeated injections. By this means many children's asylums are now kept free from diphtheria. In many thousands of cases no dangerous results have followed its use.

They are further convinced that when cases are seen early, that is, at a period when the disease can be readily diagnosed, but before general poisoning has set in, antitoxin can be relied upon to arrest, with but very few exceptions, the progress of the disease.

They also believe that, taking cases as they are met with in practice—the disease just started or far advanced, the infection nearly pure or mixed—the clinical course of the disease is lessened in severity and shortened, and that more cases recover now than formerly. This improvement is most conspicuous in the most fatal forms, the operated cases of laryngeal diphtheria.

The conclusions arrived at by Drs. Biggs and Guerard, after a review of all the statistics and opinions published since the beginning of antitoxin treatment, are so important that I insert a portion of them here.

They state that it matters not from what point of view the subject is regarded, if the evidence now at hand is properly weighed, but one conclusion is or can be reached, whether we consider the percentage of mortality from diphtheria and croup in cities as a whole, or in hospitals, or in

private practice: or whether we take the absolute mortality for all the cities of Germany whose population is over 15,000, and all the cities of France whose population is over 20,000; or the absolute mortality for New York City, or for the great hospitals in France, Germany and Austria; or whether we consider only the most fatal cases of diphtheria, the laryngeal and operative cases; or whether we study the question with relation to the day of the disease on which treatment is commenced, or the age of the patient treated: it matters not how the subject is regarded or how it is turned for the purpose of comparison with previous results, the conclusion reached is always the same—namely, there has been an average reduction of mortality from the use of antitoxin in the treatment of diphtheria of not less than fifty per cent., and under the most favorable conditions a reduction to one-quarter, or even less, of the previous death rate.

This has occurred not in one city at one particular time, but in many cities, in different countries, at different seasons of the year, and always in conjunction with the introduction of antitoxic serum, and proportionate to the extent of its use.

Why is it, it may be asked, that two substances such as tetanus and diphtheria antitoxin, so nearly identical in their efficacy as agents for immunization, differ so greatly in their curative value?

The whole secret is in the manner the two infections begin and progress.

The tetanus infection advances for from five to ten days undetected in the wound, the toxins develop unnoticed, cause their deleterious effect, and only after general poisoning has occurred is the disease detected.

The diphtheria infection starts on the surface, and before its toxins are fully developed and absorbed it is diagnosticated by the appearance of its exudate, the husky voice or the nasal obstruction. At this time we could also arrest the tetanus infection. If we allow this time to pass by, then, as in tetanus, after the constitutional poisoning has taken place, the antitoxin is usually of no avail.

The hope is often expressed that we might avoid the disagreeable rashes which follow, in a certain proportion of cases, the injection of the antitoxic serum. We have no more hope now than we had five years ago of separating antitoxin completely from the horse serum.

In several directions we are making progress, however. By selecting proper horses we now obtain a serum much richer in antitoxin than before, and thus for the number of units required, less horse serum is injected. By further attention to the selection of horses, attention to their food, lengthening the period between the last toxin injection and the bleeding, and in other ways, such as drying the serum and separating from it the antitoxin in a chemically impure state, we may hope to obtain a serum which will give rashes less frequently than any now obtainable. In the dried antitoxin we have a preparation which will keep indefinitely and which cannot become contaminated.

The dose of antitoxin should be from 1,000 to 3,000 units, according to the severity of the case and the age of the child. The dose is to be repeated within twelve to eighteen hours, if no improvement is noted and the case remains severe.

The following statistics show the absolute mortality in Berlin, Paris and New York for the past ten years. It is worthy of note that investigation shows that the majority of deaths now occurring is among those not treated with antitoxin.

FROM STATISTICS TAKEN FROM THE OFFICIAL RECORDS OF BERLIN, PARIS, AND NEW YORK, ON FILE IN THE OFFICES OF THE NEW YORK HEALTH DEPARTMENT, THE FOLLOWING DEATH RATES FROM DIPHTHERIA AND CROUP, ESTIMATED PER 100,000 POPULATION, ARE GIVEN:

ABSOLUTE DEATH RATE PER 100,000 POPULATION.

Year.	Berlin.	Paris,	New York.
1886.....	125.7	73.2	187.5
1887.....	100.7	76.9	206.6
1888.....	76.1	83.7	167.7
1889.....	85.6	79.9	146.2
1890.....	102.0	77.5	110.6
1891.....	67.5	63.0	118.7
1892.....	92.9	63.6	123.3
1893.....	100.8	51.4	145.5
1894.....	86.7	40.7	158.5
1895..	†59.7	17.7	105.2
1896.....	30.9	17.5	91.3
*1897.....	26.4	17.2	86.4

* Last quarter of year estimated.

† General use of antitoxin commenced.

In children where the danger of delay is greatest the anti-toxin should be given immediately, as soon after diagnosticating the case as possible and without waiting for the results of the culture to be reported.

Diseases Due to the Pneumococcus.—Typical lobar pneumonia, as well as certain forms of pleuritis, pericarditis, endocarditis, cerebro spinal meningitis, abscesses, etc., are now known to be caused by the pneumococcus. Lobar pneumonia has a peculiar characteristic in that very frequently between the fifth and the eighth day a period arrives when all symptoms suddenly abate. This sudden cessation of the symptoms has been considered by many to be due to the development of an antitoxin or other curative substance in the blood. These persons therefore consider pneumonia to be peculiarly fitted for the serum treatment.

It is by no means certain, however, that this is the true explanation of the crisis. We have at least sufficient facts to make us doubtful. Other pneumococcus infections do not suddenly terminate in this way, nor is it seldom that pneumonias run an atypical course and persist or relapse. Other cases, again, have added to the pneumonia a pneumococcus septicemia at the very time we should expect the development of curative substances. Experimental work on animals shows, also, that it is difficult to produce immunity by even repeated pneumococcus infections. Another fact, perhaps, bearing on the crisis is that the majority of pneumococci in cultures die after a life of five to seven days' duration, and it may well be that in the lung they find conditions develop, such as, for instance, an increase in acidity, which make the soil unsuitable for their growth, or at least for the development of their toxin. They thus die in the lung, without the blood itself containing any considerable amount of bactericidal substances.

Experimental work upon producing immunity in animals has been in progress since 1886, when A. Fraenkel found that animals which survived a pneumococcus infection possessed a certain amount of immunity. Foa, Klemperer, and others, about the year 1890 and 1891, found that injections, especially intravenous injections, of several centimeters of serum from immunized animals would immunize them against a following moderate infection, and even cure them several hours after the

first symptoms of fever have appeared. Other experimenters obtained only negative results from the same methods.

The serum used in over forty cases of pneumonia in man gave doubtful results, probably no curative and apparently no harmful effects.

The latest results, published only a few days ago by Mennes (*Zeitschrift für Hyg.*, 1897, p. 426), give very favorable results. Rabbits, and later horses, were immunized by the culture fluid sterilized by heat, and then later by the virulent pneumococci. Many of the smaller animals succumbed in the process, but some became immunized.

The serum from these inoculated animals was, according to his statements, antitoxic, immunizing and curative.

One-half cc. of serum injected in rabbits subcutaneously four hours before the injection of one hundred times a fatal dose of pneumococci gave protection. The fatal dose of pneumococci was 1-100,000,000 of a cc. Curative power was shown by reversing the injections, that is, giving the serum four hours after the infection. The controls dying in 24 hours, those injected with the serum living.

The serum finally was able to prevent the usual rise of temperature following an injection of several cubic centimeters of culture fluid obtained by filtering 48 hours bouillon cultures.

Very interesting experiments were carried out by Mennes in watching under the microscope the results of adding streptococci to the serum of immunized and non-immunized animals containing leucocytes.

In the non-immunized serum the leucocytes did not affix themselves to and draw the pneumococci into themselves in the slightest degree, while when the organisms were added to the immunized serum they were seized upon vigorously and within a few minutes entirely absorbed and destroyed.

Summing up the results here named, and others not mentioned for lack of time, we find that of a number of animals, some can be immunized, while others succumb.

The serum of some of the immunized animals has the power to prevent the development of a few organisms injected into the circulation, possibly by exciting the leucocytes to attack and destroy them.

The curative power is probably very weak, and although

sufficient has been accomplished to make further investigation imperative, I do not feel that the serum is yet of practical value in the treatment of developed pneumococcus infections, nor do I feel certain that it ever will be. The serum is practically harmless, and I think physicians who desired to test it would be justified to use it in treatment upon the results of experiments already published.

(To be continued.)

THE REPORT OF A CASE OF ACUTE HYDRO- CEPHALUS TREATED BY THE LUM- BAR PUNCTURE.*

BY EDWIN ROSENTHAL, M.D.,
Philadelphia.

THE patient was a male child, age 10 months; the third child, of Russian parentage. The other children were dead. The first (a female) died at the age of 15 months of "convulsions," as a complication of whooping cough. The second child, a male (not a full term baby) died when 2 weeks old—had icterus neonatorum, and also died in "convulsions."

The parents of the child were very youthful in appearance. The mother's history shows—Two sisters and a brother, who were "scrofulous" when very young, and were ill with "convulsions," which left each of them with some defect in their vision—they all had strabismus. The mother had no convulsion in childhood, but was distinctly scrofulous. The father could give no family history, and in appearance, did not seem bright.

Patient was breast fed, and well nourished; perfectly well when born and since birth, until the beginning of its illness. The labor was in all ways a normal one, attended to by a midwife, who told me that the position was a L. O. A., and rather rapid during the second stage, the child not being subjected to any extraordinary pressure.

Three months before the present illness the child was taken sick with a fever and cough; and whilst no active treat-

* Read before The J. Aitken Meigs' Med. Association, September 16, 1897.

ment was attempted, the child never appeared to have recovered. The mother thinks that the head seemed to be somewhat affected at this time, and appeared to grow somewhat larger. Two weeks before I was called the child again became ill with fever, gastric irritability and headache. The mother was very observant of the child and reported to the attendant that there was a slight retraction of the head, which was intermittent and increasing; the head seemed to grow heavy and rested on any supporting object, as the shoulders or arms of any one holding it. These symptoms began about March 12th of the present year. On April 3d the patient was taken ill with the "convulsions." The twitchings were on one side and lasted for several hours almost constantly, and then alternated to the other side, generally beginning on the left side. The stomach is irritable, he vomits more or less frequently, especially after feeding or when given water to drink. It was, however, never excessive. The bowels were somewhat constipated, and very little urine was passed.

Examination at this period showed the presence of sensation in all the extremities and motion somewhat impaired. The eyes were straight; the pupils contracted equally, and were at times dilated, but when in convulsions were turned inward. No vision. Movement caused convulsive twitchings, otherwise the child lay quiet. It was also noticeable that posture also relieved or produced convulsive twitchings on the opposite side on which the child lay. It was noticeable at once, the enlargement of the head, most marked above the ears. Dr. J. Madison Taylor was called by me in the case and made the following measurements:

The occipito-frontal circumference measured $18\frac{1}{2}$ inches.
 Distance over vertex (from one auditory
 meatus to the other)..... 12 inches.
 Distance from glabella to inion..... $11\frac{1}{2}$ inches.

The anterior fontanelle was very large and extended from the middle inter-frontal eminence clearly to the occipital bone, being joined to the posterior fontanelle. There was great bulging over the ears. The veins were all greatly distended. Knee jerks were scarcely to be elicited. Temperature in mouth and rectum— 98.8 degrees, F. The history of the case,

as far as could be obtained, showed clearly and conclusively its acute character.

At the suggestion of Dr. Taylor, lumbar puncture was advised and performed by Dr. Max J. Stern a few hours later.

The child was taken across the knees of the assistant, lying on its abdomen. The puncture was made by Dr. Stern with a trochar on the right side of the median line between the third and fourth lumbar vertebrae; and some 80 cc. of cerebro-spinal fluid were withdrawn.

This fluid was sent to the Bacteriological Laboratory of the Bureau of Health and the Director, Dr. A. C. Abbott, reported that the bacteriologic examination failed to reveal any tubercle bacilli.

The child was quiet as soon as the fluid was well flowing, seemed comfortable and slept for several hours. Color was good, pupils became normal and responded to light at once. Respiration became normal (previously it was Cheyne-Stokes in character) and the pulse fell from 180 to 145.

The position of the child made no difference in the flow of the fluid. After the operation, pressure over fontanelle caused convulsive movements in the limbs; the child cried naturally and took nourishment.

Measurements made immediately after the operation by Dr. Taylor were as follows:

Circumference $14\frac{1}{2}$ inches; previously $18\frac{1}{2}$ inches; loss 4 inches.

Bi-parietal $10\frac{1}{2}$ inches; previously 12 inches; loss $1\frac{1}{2}$ inch.

Glabella to inion $10\frac{1}{2}$ inches; previously $11\frac{1}{2}$ inches; loss 1 inch.

The following day (April 7th) the symptoms were worse; vision gradually faded away. Slight intermittent convulsions were produced by disturbing the patient, as feeding, etc. There was fair motion in the legs. The knee jerks were normal, the superficial reflexes could not be elicited; sensation normal. Pressure on fontanelle caused convulsions. The measurements of the head showed again an increase, but not at this or any subsequent measurements was the head as large as previous to the operation. The measurements were as follows—18 hours after the operation:

Occipito-frontal circumference.....	18 $\frac{3}{8}$ inches.
Over vertex, (from one auditory meatus to the other).....	11 $\frac{7}{8}$ inches.
From glabella to inion.....	10 $\frac{5}{8}$ inches.

The child takes and retains nourishment; and the bowels are open (calomel in suitable dose being given before and during this treatment). Urine is rather scanty, of an olive green color, and showed traces of albumin, but no casts, and also an appreciable amount of sugar, which, however, soon disappeared.

Temperature and pulse were slightly elevated. There is a cough present and physical examination reveals rales over both lungs. This, we suppose, is caused by the serum poured into the lungs during the convulsions, and received no special treatment. The baby rests much better when lying on the side; this also relieves the uneven breathing which the child has at times. After midnight it became restless and coughed a good deal. The difficulty in breathing became more marked; sometimes rapid and then altering to a Cheyne-Stokes.

April 8th.—At 3 A.M. he passed urine and was wakeful, breathing heavier and slower. At 5 A.M. he passed 2 $\frac{1}{2}$ ounces of urine, and took one ounce of milk. The pulse was strong but rapid; respiration shorter and more rapid. He was bathed at 6.30, and this was followed by a period of rest and sleep.

At 12 noon measurements made by Dr. Taylor show as follows:

Circumference.....	18 $\frac{1}{2}$ inches.
Bi-parietal.....	11 $\frac{7}{8}$ inches.
Glabella-inion.....	11 $\frac{1}{2}$ inches.
Occipito-mental.....	13 $\frac{7}{8}$ inches.

Pupils are dilated and do not respond to light. Vision is returning to right eye and probably to left. Knee jerk is normal. The child's eyes follow light fairly well. There is twitching in the right hand, but not constantly. In coughing the legs became contracted somewhat. At 6.30 P.M., whilst giving milk, the coughing began, with contraction of the left leg only, and severe contraction of the right hand, at the same time the muscles around the mouth and nose contracted, and then slowly relaxed. Whilst turning made a cooing sound

(not a cry exactly) and at 9.30 in the evening the child had a convulsion (the first since the operation) of a rather long duration. There were contractions of the left arm and leg and the left side of face. At 10.30 he took some milk (1 oz.) with difficulty. The right hand alone was contracted, thumb turned inwards. During periods of rest the child holds its gown with its right hand or it holds its left arm or hand as if it seemed to control or prevent contractions in the left hand. It does this most of the time. Some hiccoughs are present.

April 9th.—At 5.30 A.M. he had a convulsion in which the right arm and hand shook tremulously; the right leg did this later on. After taking some milk he was attacked with symptoms of suffocation. The condition grew worse and fever began, but was reduced by a bath at 6.30 A.M., and sleep followed. The difficulty in swallowing increased so that recourse was had to rectal feeding. At 7.40 A.M., there was a general convulsion, lasting 10 minutes. Child became comatose, and the intervals between the attacks became shorter as the case progressed, the convulsive movements became intermittent in character, and were produced differently by the manner in which the child lay. As an instance, at 3 P.M., there were spasms of the right half of body, and facial contractions on the left side; nystagmus; in the intervals the jaws move as in mastication. There is an anxious expression, and the head and face are flushed. The pulse and respiration are rapid and feeble. Temperature 105° . The eyes are widely opened, the pupils are dilated and there is coma.

April 10th.—The condition remained about the same. There is coma vigil and beginning cyanosis. The convulsions alternate with general twitchings. There is diminution and loss of all reflexes. The pulse can scarcely be counted. The temperature went up to $106-107^{\circ}$, and the patient died at 5.30 P.M., four days after the operation. No post-mortem could be obtained.

In the discussion that followed Dr. Stern made the following remarks: After dwelling upon the history of the operation, the method pursued and the results, Dr. Stern thought that in this particular case the indications for a repetition of the operation were marked when the nervous symptoms recurred. Again, the increase of the fluid in the cavity of the cranium, previous to death, had almost reached the quantity found pre-

vious to the operation, as was shown by the measurements. He thought that the operation should have been repeated, and that in treating such cases by lumbar puncture, the operation should be done two, three or four times, or as often as indicated. The result of such a procedure in this case, of course, cannot be told, but the good effects following the first operation would prompt him to use this method in other cases.

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SUDDEN DEATH.

HELLER reported a case of sudden death in a healthy child. The child, which seemingly was perfectly well, only somewhat pale, had taken a drink just before its death with much enjoyment. The nurse had for a short time left the child and found the latter dead on her return. The autopsy did not show the slightest cause to which death could be attributed. Dr. Cnopfsen, in the discussion which followed, mentioned the fact that in a child which suddenly died in his practice, an immense accumulation of fecal matter was found at the autopsy. It was his belief that death in these cases was due to autointoxication from the intestine, the products of putrefaction being absorbed from the intestine, and thus death induced.



PRACTICAL NOTES.

Diet in Cyclical Albuminuria.—KELLER has studied the influence of a milk diet on the excretion of albumin in the urine in cyclical albuminuria (*Jarb. f. Kinderheilk.*, 1897, *xliv*, 64). Five patients suffering from cyclical albuminuria were given a pure milk diet for a time, and then again a mixed diet. The quantity of urine passed during twenty-four hours was regularly measured, and the specific gravity and amount of albumin carefully estimated by Liborius' method. In all these cases it was found that neither was the excretion of albumin favorably influenced by a milk diet, nor was diuresis markedly promoted by it. The author therefore thinks that we need not prohibit the use of a mixed diet in cyclical albuminuria, even though it contain plenty of albumin, besides the carbohydrates.

A New Method for Sterilizing Drinking Water is recommended by Schumburg; he claims to be able to destroy all the bacteria of water and all pathogenic germs by it within five minutes. The method is as follows: 0.2ccm. of a solution of bromine (bromine 20.0, bromide of potassium, 20.0, aquæ. 100.0) is added to one liter of water, and thereby a perfect sterilization is obtained within five minutes. For removing the 0.2ccm. of bromine solution, a like quantity of a nine per cent solution of ammonia is used. The taste of the water so treated can hardly be distinguished from that of the impure. The color is absolutely clear. In this way it is possible to render about 16,000 liters of water free from germs by 1 kilogramme of Bromine, at an expense of less than two dollars.—*Deutsche Med. Wochenschr.*, 1897, *xxiii*, 145.

Congenital Defect, or Defective Development of One Kidney.—GOECKE, at the Cologne Surgical Society, reported three cases of this anomaly which were found at the autopsy. The specimen from one of these cases was presented. It showed a rudimentary development of the left kidney, presenting as a small connective tissue formation two ccm. in size, situated above the left seminal vesicle, and connected with the latter by a fibrous cord. A number of small blood vessels, which

arise partly from the aorta, partly from the arteria iliaca communis sinistra lead to this rudiment. The true vessels of the kidney are absent from their normal situation on the left side, as is also the left ureter. The supra-renal capsules are present and normal on both sides. The right kidney, which is distinctly enlarged, is nearly wholly embedded in a tumor, the microscopical examination of which shows a very interesting composition. We seemingly have to deal here with an endothelium, on certain parts of which a great growth of vessels predominates, while other parts present a purely fibromatous distribution. The tumor greatly resembles the neoplasm described by de Paoli a few years ago, as a primary angiosarcoma of the kidney. The tumor does not seem to have originated from misplaced germs of the supra-renal capsule.—*Deutsche Med. Wochenschr.*, 1897, *xxiii*, 53.

Contribution to the Resuscitation of the Asphyctic New-born.—WOLFRAM reports a case of asphyxia in the new-born, where Schultze's method could not be used on account of the low ceiling of the room, and which was resuscitated by laying the baby cross-wise on his lap, with the head hanging down; he now encircled the thorax with his left hand, and the thighs of the child from behind with the right, lifted the latter up towards the abdomen, at the same time compressing the thorax. On relaxing this movement the first inspiration was obtained. In a second case of deep asphyxia the same method proved successful.—*Münch. Med. Wochenschr.*, 1897, *xliv*, 287

Spontaneous Gangrene of the Skin.—At the meeting of the Nuremberg Medical Society and Polyclinic, GOERL gave the history of a twelve-year-old girl, presenting no signs of hysteria or other symptoms of a disturbance of the nervous system, suffering only from a moderate degree of anemia. The gangrene suddenly occurred over night, on three spots of the right hand and on two of the thigh, appearing as a red nodule, which was only slightly raised and surrounded by a delicate red zone. While the latter progressed at its periphery, the center became depressed and turned black. This dry scab was then thrown off, leaving behind it a deep ulcer, similar to a suppurating gumma of the skin.

Hemoglobinuria.—STEINHARDT reported the case of a five-year-old girl with hereditary syphilis, who was being

treated by iodide of potassium, when she suddenly voided urine of a dark-brownish red color, which looked suspiciously like blood. On heating the urine about one-sixth became solidified; the reaction for blood was quite marked; iodine could not be found. On the following days the urine remained quite free both from blood and albumin. A microscopical examination was not made, for certain reasons. The parents of the child said that the latter had frequently passed such urine before, but only for a short time. Once icterus had been present at the same time. The diagnosis hemoglobinuria was made, in view of the recurrence, the sudden appearance and disappearance of the attacks, as well as the presence of icterus at one time. As etiological factors, syphilis and catching cold were significant. Hemorrhage from the kidney and hemorrhagic nephritis may be excluded from the absence of all other symptoms and causes pointing to them.—*Munch. Med. Wochensch.*

Mirror Speech, "la parole en miroir," analogous to mirror-writing, is the name given by MARCOTTE to a symptom observed by him in a girl twelve years of age suffering from abscess of the brain following an otitis. The patient was trephined when in a condition seemingly *in extremis*, after which operation speech again gradually returned, at first in perfectly unintelligible sentences; for example, the child said: "Le—quille—trans—ser—lais—me—vous—lez—vou—te—tan—ma," etc. It was only after the patient was asked to write it down, that it was discovered that the syllables, and even long sentences, were pronounced in an inverse order, in such a manner that the phrases written above meant: "Ma tante, voulez-vous me laisser tranquille." This disturbance of speech persisted for five weeks. Eventually the child fully recovered.—*Berl. Klin. Wochensch.*, 1897, xxxiv, 19.

Ventral Hernia.—WIESINGER demonstrated a case of acute incarcerated ventral hernia at the linea alba, in a child one and a half years old. The diagnosis was only made after the illness had lasted seven weeks, when the patient was admitted to the hospital. There had been present, from the fourth week of illness, periodical discharges of pus from the navel. Characteristic symptoms of incarceration were absent, and the bowels particularly were regular. On probing the

umbilical fistula the whole anterior wall of the abdomen was found to be separated from the peritoneum and the fossa transversa, and an intestinal fistula of the size of a five-penny piece leading into this space, directly above the umbilicus, was discovered. The child succumbed to asthenia later on, when a prolapse of the intestinal coil leading to it occurred through the fistula. Autopsy disclosed a perforation of the jejunum, whose wall was partly incarcerated in a split of the fascia transversa, and thus became gangrenous. — *Münch. Med. Wochensch.*

Infant Powders.—

1.

Calcined magnesia.....	50 parts.
Venetian talc.....	250 parts.
Boracic acid.....	1 part.

2.

Arrow root.....	1 lb.
Orris root	2½ ozs.

3.

Potato or wheat starch.....	1 lb.
Orris root	¾ oz.
Oil bergamot.....	10 drops.
Oil rhodium.....	2 drops.

Boracic acid may, if desired, be added to any of these powders, the amount given in the first formula serving as a guide.—*Practical Druggist.*



EDITORIAL.

THE TOBACCO HABIT AMONG THE YOUNG.

WHATEVER may be thought concerning the effect of tobacco-smoking on the adult, the opinion that it is deleterious in the extreme on the young is unanimous and decided. Of late years juvenile smoking has been spreading like an epidemic in all countries of the world, and is attacking both the physical and moral health of nations. In France, in Germany, and in this country, efforts have been made to check its further inroads. In some parts of Germany, as also in portions of the United States, laws have been enacted prohibiting persons under the age of eighteen from smoking, and rendering it a punishable offense for any one to give or sell tobacco to children. In France numerous societies have been formed for the suppression of the vice. In no country has this habit increased with the young to a greater extent than in England. The advent of the cheap cigarette is doubtless chiefly responsible for this state of affairs. To see boys of seven or eight years old puffing their cigarettes is quite a common occurrence in London, and particularly is this the case in the East End. However, when a packet containing five cigarettes can be bought for two cents, the fact that smoking has become so general can scarcely be wondered at. Sir William Harcourt, in his last speech on the Budget, referred to the large increase of revenue received from tobacco, in these words: "I believe it is mainly due to the great increase in the consumption of cigarettes, which are especially attractive to our youthful population." He added: "I am told of one manufacturer who makes two million cigarettes a day who hardly made any a few years ago." It has been proposed in Great Britain, as a remedy for the evil, that the members of the medical profession should make a move in the matter, and urge on the managers of schools the importance of special teaching exposing the harm-

fulness of juvenile smoking, and should also make such representations to Parliament and the Government as might lead to efficient legislation. It is difficult to see in what manner this vice can be checked among children unless by repressive measures. If the medical profession in this country were to exert themselves with a similar object in view the habit might be yet stopped. There is no question in the case of interference with a person's liberty, it is simply a matter of health and morals. In Paris, some months ago, at a meeting of the Society against the abuse of tobacco, it was decided to submit a petition to the Chamber of Deputies praying that "all telegraph messengers and school boys should be prevented from smoking, and also that tobacconists should be forbidden to sell their wares to mere infants whose lips should know no other pleasure than the cheeks of their mother." Though the wording of this petition is rather curious, it is quite to the point. There is a humorous side to the question of children smoking. In a book on tobacco lately published is the following paragraph: "It was the custom in England about the middle of the seventeenth century, for children going to school to carry in their satchel with their books a pipe of tobacco, which their mother took care to fill early in the morning, it serving them in place of breakfast. At the accustomed hour every one laid aside his book to light his pipe, the master smoking with them and teaching them how to hold their pipes and draw in the tobacco." At the present day Dutch children smoke pipes, and little boys of five and seven years old calmly discuss these calumets of peace as they proceed to school. Still this does not alter the fact that smoking injures the health of the young. The excessive use of tobacco is harmful to many adults; it tends to deteriorate the moral character in the same way as the inordinate use of chloral or bromide of potassium will deprave the mind, by lowering the tone of certain of the nerve centers. If this is so with grown men, how much more forcibly must the case apply to immature youths?

EDITORIAL COMMENTS.

Vital Statistics in the United States and England.

From a perusal of the census of this country and that of England the fact is gathered that the death rate of infants and children under ten years of age is decreasing, while persons over 45 years, on an average, do not live so long as some years ago. Fifty years back the death rate of children under five years of age was 43.7 per cent. At the present time the rate has declined from 17 to 21 per cent. This relative alteration is somewhat curious and gives rise to speculation as to cause. For the decreased infantile mortality more than one reason can be assigned. Many children, who probably in the old times would have died before reaching the age of two years are now saved by the intelligent application of science. Some of these, however, never become robust, but perhaps by a careful mode of life reach the age of maturity, when the inherent weakness of their constitution is developed and they fade away. Another cause for this decrease in the death rate of infants is that more common sense is exercised in their rearing. Much of the superstitious ignorance in regard to the care of infants is dying out. Feeding (though it has not yet reached perfection) proceeds on more intelligent lines.

After all, the chief cause of this prolonged longevity is the wonderful growth of the principles of hygiene all over the world. If this were not the case the large cities in highly civilized countries would be as liable to decimation by epidemic disease as they were a few hundred years ago, and as, indeed, they still are in the East. As an instance of the immense interest taken in all that concerns public health, the following is an account from Australia. At the meeting of the Inter-Colonial Medical Congress of Australia in 1896, the motion was moved and adopted "That in the opinion of the congress elementary hygiene should form a subject for instruction in all State-supported schools and where practicable

teachers in such schools should be required to undergo a course of instruction in the same subject previously to their being licensed to teach."

**Sanitary Condi-
tions in Relation
to Diseases of
Childhood.**

We, in these days are rather too apt. to pride ourselves on our superiority to the ancients, and particularly in our knowledge in matters connected with public sanitation. There can be no room for doubt but that within recent years immense strides toward perfecting our system of public hygiene have been made with a corresponding improvement in general health and morals. But the fact should not be forgotten that many of the nations of the past, notably the Egyptians, Greeks and Romans, were by no means blind to the importance of public sanitation. The sewers of old Rome, the "Cloaca Maxima" for instance, remains to this day as a monument of their architectural and constructive ability and a reproach to the dirty customs of their degenerate descendants. Nowadays, when the tendency is to desert the country and flock to the already overcrowded towns the question of efficient and satisfactory sanitary arrangements is one of the greatest moment. To infants and young children in fact this is a matter of life or death. The epidemics of diarrhea and diphtheria which have been prevalent in London this summer have been directly traced in the lower districts of that city to insanitary conditions. In order to propagate and rear a race both physically and morally sound, it is absolutely necessary that the conditions under which the people live should be healthy. Houses and especially sleeping rooms should be large and airy, baths should be attached to every dwelling, and opportunities for personal cleanliness should be everywhere obtainable. Parks and open spaces should be as numerous as possible, for fresh, pure air is to children of as much importance as food or drink. It is to be hoped that when the machinery of Greater New York is in proper working order, that as she is now the second city in

the world in point of size, she may be the first in point of health.

Physiology in Girls' Schools. The United States is usually credited with being abreast, if not ahead, of most countries in its system of education. Perhaps she might allow that Germany, on the whole, was her superior in this respect, but that England in matters educational was in front or even equal, would meet with strenuous denial. Still, if America wishes to retain her prominent position and show the way to the world as an instructor of the young she must look to her laurels. The School Board system of education in Great Britain is advancing by leaps and bounds. For some time, piano playing, drawing and other accomplishments have formed a part of the ordinary curriculum. But it has been reserved for Birmingham to outdo all this, and claim the honor for her schools of being the most thoroughly up-to-date. It was stated in the papers some time ago that forty girls at a Birmingham Board School had twenty rabbits given them to dissect. The animals were killed by chloroform, cut open and the pupils were required to make certain experiments. The parents of some of these youthful searchers after knowledge objected to this form of advanced education and a question was asked in the House of Commons. Sir John Gorst said in reply, that physiology was a compulsory subject in the course and the regulations of the Science and Art Department required a practical acquaintance by the use of a microscope with the minute structures of the several tissues and organs. The point as to whether physiology is likely to be of practical use to the ordinary girl is a question rather open to doubt. Many persons will think not. For a girl to be able to skin and skilfully dissect a rabbit prior to cooking, is without doubt a useful accomplishment. More so, perhaps, than a knowledge of piano playing and drawing. If, too, in addition to this, she can gain a bowing acquaintance with physiology, all that can be said is that at least there will be no harm done.

Sterilized Milk for Children. The question of sterilized milk as a food for infants has once more been brought before the notice of the inhabitants of New York in a rather unpleasant manner. The action of the health board in securing a technical conviction of Mr. Nathan Strauss on the grounds of selling milk below the required standard has considerably exercised public opinion. It was not denied that the milk fell but little below the requisite quality, and the methods of sterilization used by Mr. Strauss had been approved by the Board. It would appear that the Board have acted somewhat severely; surely a notification would have answered the purpose equally as well as a conviction. Since Mr. Strauss has been at work in New York placing sterilized milk within the reach of the very poorest the mortality among little children has greatly decreased. Eight years ago the death rate from diarrhea and kindred diseases among the very young amounted to 160 in every 100,000, now from the same causes it is reduced to about 100 in every 100,000. Infantile diarrhea induced by the consumption of unsuitable milk is more destructive to life than any other disease to which a child is subject. That it kills more infants than all the infectious diseases will not probably be going beyond the mark. The fact that boiled milk is more easily digested in addition to being as nutritive and safe as a food for infants is one that many mothers and nurses either will not believe or overlook. Dr. Chamonin has lately proved by many experiments the truth of this assertion. Where it is difficult to obtain properly sterilized milk, the best plan is to boil at $21\frac{1}{2}$ degrees Fahrenheit for 20 minutes.

SOCIETY REPORT.

NEW YORK ACADEMY OF MEDICINE—SECTION ON PEDIATRICS.

Stated Meeting, October 14, 1897.

Hodgkin's Disease Beginning at the Eleventh Year.—

Dr. CHARLES E. NAMMACK presented a boy suffering from this disease. He said that, according to Osler, this disease was an affection characterized by progressive hyperplasia of the lymphatic glands, occurring with anemia, and sometimes accompanied by secondary lymphatic growths in various parts of the body. It was probable that various distinct and definite pathological conditions were still covered by the term, Hodgkin's disease. It was now believed that this disease was an infectious process, but the nature of this process was not known.

The patient presented, L. W—, twenty years of age, had a family history of phthisis. He had not had any of the early diseases of childhood, but had always been delicate. The present illness began in June, 1897, with pain and swelling in the ankles, dyspnea on slight exertion, cough and expectoration. Nine years ago it had been noticed that the glands on the right side of the neck were enlarged, and three years later those on the other side of the neck were also observed to be larger than normal. The thyroid and spleen appeared to be normal. The patient was markedly anemic. The ratio of the red cells to the white cells in the blood was found to be 42 to 1. Under the use of Fowler's solution the number of red cells was decidedly increased, the ratio being finally 100 to 1. On admission his pulse was 144, and rectal temperature 101.4° F. A few coarse râles were found scattered through the lungs, but microscopical examination of the sputum and physical examination of the chest showed no tuberculosis. There was no history or apparent evidence of past syphilitic infection, or of inherited syphilis. True leukemia was excluded by the absence of enlargement of the spleen and of the characteristic myelocytes and nucleated red corpuscles, and also in the increase of lymphocytes. The speaker said that cases had been recorded in which a true leukemia

had developed during the course of Hodgkin's disease. Ordinarily, the spleen was first enlarged, and the lymphatic glands never formed the huge bunches seen in the pseudo-leukemia of Hodgkin. Malignant lymphomata could be excluded by the slow and painless course of the case, as in malignant growths there were rapid cell proliferation and progression to a fatal ending. Hutchinson had cited a number of cases to show that between scrofulous glands and lymphadenoma there was no abrupt line of demarcation, nor between the latter and lympho-sarcoma, and that the key to the whole was to be found in the inherited proclivities of the individual. Other observers had taken a similar view. The prognosis was almost invariably bad, but the length of time the disease continued was quite variable. In the treatment arsenic appeared to be the most generally useful drug, seeming in a small percentage of cases to exercise an almost specific influence. Cases had also been reported in which a cure was alleged to have been effected by thyroid and by the administration of bone marrow.

Tubercular Meningitis; Recovery After Lumbar Puncture.—Dr. WILLIAM L. STOWELL presented a boy of five years, whom he had first seen on August 30, 1897. The history was that on August 1st he had had a spasm, and had remained unconscious for twenty-four hours afterward. After this he had been more or less drowsy for two or three days, and had cried frequently. The convulsions had been supposed by the attending physician at that time to be due to indigestion. When first seen by the speaker the boy was lying in a semi-stupid state, and had a sharp cry at intervals. He was quite irritable at times. The pulse ranged between 120 and 150, and was sometimes intermittent. By the end of August he had developed Cheyne-Stokes respiration, and lay curled up, with the head thrown back. The abdomen was slightly flattened. On September 1 he became totally blind; the pupils were widely dilated and not responsive to light. A diagnosis was made of tubercular meningitis. Lumbar puncture was performed, and about 10 cc. of clear fluid were slowly withdrawn. Tubercle bacilli were found, thus substantiating the diagnosis of tubercular meningitis. A few days later, on examining the same fluid, the tubercle bacilli could no longer be found. No culture was made. Much to his surprise, about a week later, the boy

had been brought into the dispensary. Examination of the eyes showed absence of vision; pupils dilated and not responsive; no accommodation. The outlines of the disk were hazy, but not swollen. The condition of the eyes had gradually improved since that time, so that he could now see fingers held before him. Dr. Stowell said that he had only been able to find one case of lumbar puncture, in which the diagnosis had been positively made, which had recovered. There was, of course, just a possibility in his case that there had been some error in the preparation of the first slide on which the tubercle bacilli were observed. It was [not improbable that the neuro-retinitis would lead to a permanent impairment of vision. The medicinal treatment had consisted chiefly in the administration of bromides and iodide. If the meningitis were a simple one, and not a tubercular meningitis, there was certainly no history to account for its origin.

Dr. HENRY KOPLIK said that at the recent meeting of the American Pediatric Society there had been a discussion on this very question of whether or not a case of tubercular meningitis could recover. At that time Dr. Jacobi had related at least two cases from his experience, in which the diagnosis had been clinically established without doubt, in which recovery had ensued. The tubercle bacilli had been found, on the other hand, in ascitic fluid, and the post-mortem examination had not verified the presence of tuberculous peritonitis.

Tuberculosis After Circumcision.—Dr. MARTIN W. WARE exhibited under the microscope a tubercular gland from an infant who had been infected with tuberculosis during a ritual circumcision. C. N. —, an infant of three months, born of healthy parents, had been circumcised according to the ritual when one week old. When about two weeks old, the mother noticed that the wound was still open, that it was considerably inflamed, and that the glands in the groin were enlarged. Two or three weeks later, the child was first seen at the Good Samaritan Dispensary. The case was at first looked upon as one of syphilitic infection. There was an ulcer of well-defined area on the prepuce, with moderate secretion. The suppurating buboes were incised and a considerable quantity of pus evacuated. The ulcer was curetted, and the patient was put on anti-syphilitic treatment, but in spite of

these measures the local condition grew worse, and finally a diagnosis of tuberculosis was made. A slide was shown under the microscope in proof of the tuberculous nature of the infection.

Dr. Ware said that he had collected twenty-one cases from the literature. Among these were ten from one operator, who subsequently died of pulmonary phthisis. Three of the ten children died of tubercular meningitis, the diagnosis being corroborated by autopsy.

Dr. KOPLIK said that he had seen twelve cases of inoculation during circumcision, most of them, however, being syphilitic. Had seen the case just reported, and its appearance had been peculiar. The whole inguinal region, extending up on to the abdomen, had been phlegmonous, and along the cut were peculiar cheesy nodules. Unfortunately, the child passed from under observation, but there could be little doubt that the infection would soon prove fatal.

Streptococcus Enteritis with Demonstration of Cultures and Bacteriological Specimens.—Dr. E. LIBMAN said that he had studied two cases of streptococcus enteritis through the kindness of Professor Escherrich. The first, a child of two years and a half, had been taken suddenly ill with vomiting, diarrhea and high temperature. During the first three days there were about twenty stools of greenish mucus. The child was apathetic and somnolent. After the first day the temperature remained at about 100° F. After the third day the number of stools became less, and the stools themselves more feculent. The treatment had consisted in regulation of the diet, and the administration of tannalbin.

The second case was that of a child of eight months, suffering from vomiting and diarrhea. The temperature at first was 101.5° F.; the urine was scanty and albuminous and the abdomen was retracted. The child had eight or ten of these greenish stools a day. It died on the fourth day. The autopsy showed fatty degeneration of the heart, kidneys and liver. The spleen was slightly enlarged. The gastro-intestinal tract was pale. The mucous membrane of the small intestine was swollen and presented pin-point hemorrhages. The most marked changes were just above and below the ileo-cecal valve, at which points the mucous membrane was thickened

and swollen. Microscopical examination showed areas of small round cell infiltration in the submucosa, and marked intra-glandular inflammation. The heart, liver, kidneys and spleen contained streptococci. In the early stools from this case, an enormous number of streptococci were found. The blood showed streptococci alone, and the urine, streptococci and colon bacilli.

The streptococcus found in these cases was a flattened coccus, occurring in short, straight chains, or in angular chains. It was the streptococcus described by Hirsch. In most of the gelatin cultures there was slight liquefaction.

Dr. KOPLIK said that the paper opened up a subject which had lately become of great importance. Fischer, of Prague, had first called attention to a not infrequent form of septic diarrhea which many practitioners must have noticed. The subject had been very well studied by Dr. Booker, of Baltimore. These streptococcus infections of the bowel explained many complicating diseases, such as pneumonia. As he understood it, the title of the paper was only a provisional one, for we did not have sufficient grounds as yet for classifying these infantile diarrheas from a bacteriological or even a pathological standpoint. Escherrich did not yet fully subscribe to the bacteriological classification of diarrheas advanced by Dr. Booker.

Dr. FRUITNIGHT said that one of the practical points in the paper was the explanation of the septic nephritis which so commonly developed in connection with cases of diarrhea.

Some Unusual Phases of Vaccination.—Dr. A. E. BIESER read a paper with this title. He said that his experience, representing 250 cases, did not justify him in the statement made by many, that vaccination is harmless.

The first case reported he described as one of acute septicemia following vaccination. M. W. ———, three years and a-half old, had been intubated and inoculated with antitoxin for croupous laryngitis on February 3, 1896, and had made an uneventful recovery. The child had been in good health for a year, when, on May 17, 1897, without any premonitory symptoms, or history of stomach or bowel disturbance, the child developed a temperature of 105.6° F. in the axilla (107° F. in the rectum). There were vomiting, loose stools and wild delirium.

She was soon seized with repeated convulsions, and in spite of treatment, died in the course of a few hours from the onset of the disease. The coroner decided that death was due to "perfectly natural causes." Personally, he had looked upon the case as one of acute septicemia. There was nothing to indicate a diphtheria in any form, nor was there anything to indicate scarlatina. Cases of intestinal sapremia did not usually die as quickly as this one. The child had been vaccinated for the first time by a health officer, eight days previously. The vaccination was in the pustular stage, and the severe symptoms developed just at the time when we knew the invasion of the virus affected the system most potently.

The second case was one of purpura hemorrhagica following vaccination. C. B. ———, five years old, had been vaccinated by a health officer on March 25, 1894, or nine days before she was seen by him. The girl was restless and irritable, and there was a general, bright measles-like eruption, accompanied by constitutional disturbance, but with no catarrhal symptoms of any kind. The girl had just recovered from an attack of measles. The purpuric spots were most numerous on the vaccinated arm, especially in the flexures. At the flexure of the elbow was a purplish extravasation. The girl recovered. Purpura was known to be one of the occasional sequelæ of vaccination.

The third case was C. T. ———, eleven years of age, who was successfully vaccinated by a health officer after two previous attempts had failed. On the tenth day after the successful vaccination there developed a macular eruption, limited to the vaccinated arm, and extending from the shoulder to the elbow. On the thirteenth day the eruption had become papular; then it became vesicular; then pustular. All of these pustules were umbilicated. The cellular tissue was markedly edematous. The ulcer left by the primary pustule was as large as a silver dollar, and was so deep as to lay bare the deltoid muscle. The case was evidently one of localized vaccinia.

The fourth case was that of a child of two years, who had been vaccinated by him on October 9. Nine days later a pustule appeared on the left cheek, the result of inoculation with the finger nails. It was similar to, and in about the same

stage of development as the one on the arm, and it passed through the same stages. Cases of this kind seemed to indicate that during the few days following vaccination, the process was local, and the body in general had not been rendered immune.

A case was cited in which he had re-vaccinated a child five days after a primary vaccination. The primary vaccination finally "took," and went through the usual stages, while the second vaccination failed. This he explained by supposing that the system had already been rendered immune.

Dr. ROWLAND G. FREEMAN said that he thought our knowledge of variola and vaccinia had advanced to such a point as to admit of the acceptance of the following definition: "Vaccination is the conference of artificial immunity by the inoculation of the micro-organism (as yet unknown) of small pox, modified by its passage through a relatively insusceptible animal." If this were true, and he thought it would be admitted, we should be careful that in vaccinating we introduced as far as possible only this organism, either during the operation of vaccinating or during the period of active reaction. With such care we should have fewer "unusual phases of vaccination" and almost no complications. The complications of vaccination were more frequent and more serious than was usually appreciated. These complications were inflammation of the neighboring skin, of neighboring lymph nodes, suppuration of connective tissue, erysipelas, ulceration, blood poisoning and acute and chronic skin diseases. Deaths directly traceable to vaccination did occur, and although comparatively rare, were sufficiently frequent to demand our attention. They were usually due to germ invasion, occurring more commonly some days after the vaccination. The gravity of the resulting inflammation depended upon the susceptibility of the individual. It was not absolutely possible to introduce this unknown organism of vaccination entirely free from the contamination of other organisms, but it could be done approximately by means of the glycerinated lymph. This was much less likely to be contaminated by other bacteria than were the old ivory points. The glycerine with which the virus was mixed had a bactericidal action on the contaminating bacteria, but no action of that sort on the micro-organism of small pox, at least for a number of months. Moreover, as this virus was

distributed in closed capillary tubes there was no danger of contamination in handling. By inoculating with aseptic instruments such virus from a source where it was known to be prepared in a cleanly manner, as by the New York Board of Health, one could become comparatively safe from the danger of a contaminating inoculation. The danger of contamination some days later—and this was the greatest danger—could only be avoided by a proper protective dressing. The present method of forced vaccination without providing the person vaccinated with a clean dressing to protect him from the friction of dirty clothing, seemed antiquated and unfair. All physicians doing dispensary work saw severe inflammation following vaccinations, and many had seen death resulting from such infection. If it were possible to do away with this by protective dressings, it should be done for the rich and poor alike, the poor needing it more than the rich, for their clothing was of necessity dirtier. Such protective dressing should provide for an air-space around the area of vaccination, one and a half to two inches in diameter, covered by a dressing which allowed some air to pass through. Such protection was afforded by a Cowan shield covered by two or three thicknesses of gauze bandage.

Dr. J. H. HUDDLESTON thought the cases presented in the paper were not very unusual; similar cases were to be found in the extensive and detailed reports in Germany, and by the vaccinators of our own Board of Health. The Health Department received many complaints regarding the degree of inflammation observed in the arm after vaccinations, but many of these complaints had but little foundation. Vaccination was too commonly done in just such a way as to most emphatically favor infection. Hitherto it had not been possible anywhere in the world to furnish vaccine lymph free from other germs; the so-called "germ-free" lymphs had been found inactive when tested. When the glycerinated lymph of the Health Board had been tested for the ordinary pathogenic germs, it had been demonstrated that the streptococci and other common pathogenic germs were not present. Every batch of the lymph prepared here was actually tested; it was not placed on the market until this had been done, and the tests had proved satisfactory.

Even admitting that the case of septicemia described in

the paper was due to the vaccination, it was evident that the case was an isolated one, and this in itself would throw much doubt upon the vaccination being at all responsible for the septicemia. He would like to know if others had found, as Dr. Bieser had done, that purpura was prone to follow vaccination; certainly he had not heard of this as a common sequel. It had been stated by some authors that true erysipelas was a common sequel of vaccination, but the most careful reports on this subject would seem to indicate that the condition was not a true erysipelas, but rather a form of dermatitis. Inquiry among medical men in this city had failed to bring to light cases of true erysipelas. It could not be denied that deep ulceration was a common result, particularly in the cases in which the vaccination had not been protected in the manner so wisely advocated by Dr. Freeman. When a second vaccination was made within three to five days of the original vaccination, the rule was that the second one developed more rapidly than the first one, so that both usually passed through the later stages at the same time.

Dr. LOUIS FISCHER was of the opinion that the keynote to success in vaccination was careful asepsis, just as in ordinary surgical operations. It was necessary that the surface to be vaccinated should be carefully cleansed. He had himself observed recently a case of accidental vaccination on the cheek. During the past summer he had seen one fatal case of septicemia, death occurring nine days after vaccination. In this case there were some purpuric spots on the body.

Dr. G. F. MORRIS said that the reader of the paper based his assertions on an experience of only 250 vaccinations; what he would have to say was based on an experience of 250,000 vaccinations and over a million and a half of inspections of vaccinations extending over a period of seventeen years. He cited a case in which, after special precautions, such as scrubbing the skin with alcohol and ether, had been taken prior to vaccinating, there had developed an unusual dermatitis. Physicians, he said, gave themselves a great deal of trouble by making too many scarifications, or making them too large. It was the custom in Europe to make a number of scarifications, yet no more constitutional disturbance would result from twenty than from one proper and successful scarification and vaccination. The ulcer produced by vaccination was a matter

of no consequence at all. When the pustule became broken the arm would often be bandaged up so as to obstruct drainage, and in this way healing of the ulcer would be prevented or greatly retarded. The arms should not be bandaged up; they should be left open and free to the air. The accidents arising after vaccination were usually due to handling the arm and breaking the vesicle or pustule. He had seen a great many secondary vaccinations. Children would often carry the virus on the finger from the original vaccination to some other part of the body. He had seen cases of vaccination in which the vesicle would not develop for two or three weeks after the vaccination. It was due to some little understood activity of the virus. On the other hand, he had seen vaccinations develop so rapidly that a vesicle would be formed in three days, and the whole process completed in two weeks. It could not be said that there was any distinctly typical course for a successful vaccination. Physicians had become accustomed to lay great stress upon the pitting. This pitting was of no consequence whatever, and occurred more often in improper vaccinations than in others. The pitting which the books spoke of he had seen produced in other ways. In one case he had observed this pitting from a dog-bite; the scar had seemed so typical of a good vaccination that he had been on the point of passing the child as properly vaccinated, when he had been told what had produced the scar.

At one time he had had occasion to look carefully into the voluminous literature of vaccination, but had been unable to find anything regarding the "fungus" or non-protective hemorrhagic vaccination. Day after day he received certificates from physicians to the effect that children had been properly vaccinated, although in reality they only had this fungus vaccination. He had scratched through such bullæ, allowed the serum to run out, and had then rubbed in good vaccine virus, and a typical vaccination vesicle had developed right on the top of this old blood blister. It was believed that vaccination on the top of an old cicatrix would produce a negative result, but he had vaccinated on a very old and hard cicatrix, and had developed a perfect secondary vaccination upon it. As regards the period of protection from vaccination he said that he had vaccinated children in infancy, and again at the age of five years, and they had developed a most

typical secondary vaccination. He did not mean to say that this always occurred, yet the younger the child the more likelihood there was that it was not properly protected. If a child were vaccinated two or three times under the age of thirteen years, it would be difficult to have the vaccination "take" again perhaps before the age of twenty years.

On two occasions he said vaccinations had been performed for obliteration of a nevus—in one case on the lip, and in the other at the margin of the hair. The nevi were obliterated. In one or two instances he had obliterated a mole in this way.

Dr. W. L. CARR said that in our attempts to make the arm clean prior to vaccination we must be careful not to interfere with the vaccination. Those who had used antiseptics, such as bichloride and alcohol, had noted that such applications had a tendency to retard and interfere with the vaccination. While protective dressings were useful, the need of having a free circulation of air should not be overlooked.

Dr. BERG said that in vaccinating on the lower extremities he had seen in two cases a troublesome suppurative inguinal adenitis. He thought the medical profession should make it a practice to refuse to vaccinate on any part of the body except the arm. He would like to know how careful the Health Board vaccinators were about vaccinating in households in which there had recently been a case of one of the exanthemata. He recalled one case in which this precaution had been omitted, and as a result the child had developed a remarkably severe type of measles, which had terminated fatally.

Dr. MORRIS said that it had been very well established that secondary vaccinations gave more trouble as regards axillary adenitis than did primary vaccinations, and the same, of course, was true of inguinal adenitis after vaccinations on the lower extremity, the reason being that these vaccinations were done on adults, and the parts were not kept so still.

Dr. FREEMAN said that in vaccinating on the leg in adults bad results were often observed, but this did not seem to be the case in children, even when old enough to run around. In the Foundling Asylum seventy children had been vaccinated on the leg, and in none of these had there been any bad result.

Dr. FRUITNIGHT said that many years ago he had been

called to see a boy of eight years, who had been suddenly seized with tetanus. The boy had been vaccinated by a health officer about six days previously. He could find no other sign of traumatism except the vaccination wound, and had naturally thought that the traumatism—not the vaccination *per se*—was the cause of the tetanus. This was before bacteriology had thrown so much light upon the nature of tetanus. This boy lived in a place where he could play about the garden and among the horses, and we know now that such conditions were specially favorable to the development of tetanus.

Dr. BIESER said that if uncontaminated lymph could cause a distinct disease like vaccination—and he thought vaccination was a disease—there was ground for the supposition that the toxine, irrespective of bacterial action, could propagate itself if proper soil were present. He mentioned several writers who had referred to purpura as a sequel of vaccination.



ABSTRACTS.

INFECTIOUS PURPURA DUE TO CHRONIC BRONCHO-PNEUMONIA IN A CHILD ONE YEAR OLD.

CH. LEVY (*Rev. Mens. d. malades de l'enfance*, 1897, xv, 16) says that purpura, as a symptom in various diseases, is generally caused by microbes, and the author recognizes in this form a purpura of toxic and one of septicemic origin. In the first variety "toxines" are formed by the microbes confined to certain organs (for example the intestinal tract, after eating spoiled meat, etc.) which act on the vaso-motor nerves through the blood, by which a dilatation and finally a rupture of the capillaries of the skin is produced and followed by the characteristic appearance of macules. In the septic form the microbes are directly carried beneath the skin in the blood current and become the cause of microbic emboli. The effect may be increased if the microbes situated under the skin should by chance produce "toxines," which would act on the vaso-motor nerves. The following observation is recorded: On August 8, 1896, a child, aged one year, greatly debilitated and suffering from dyspnea and a whistling respiration, was brought to the hospital. The temperature was normal. Preliminary diagnosis: tuberculosis. A rise in temperature occurred eight days later, gradually attained 40° C. on the twenty-second of the same month, which continued with little variation to the twenty-seventh. Purpuric spots appeared on the abdomen on the twenty-fifth, and the whistling sounds changed to rales, heard on both sides of the chest. On the thirtieth the temperature was 38° C. On September 9 the temperature again rose to 40° C., while the purpuric spots extended over the whole anterior portion of the thorax and thighs, forming large black patches on the chest, of the size of two five-franc pieces. On the 13th of the same month, that is, at the end of thirty-six days, the child succumbed. The diagnosis of a double broncho-pneumonia was made on August 22.

The autopsy disclosed all the changes of a pneumonia, but no tuberculous processes. The liver, heart and kidneys presented nothing abnormal; the mediastinal glands were enlarged, red, but did not contain cheesy foci. The blood examined during life was steril; placed on gelatine ten hours after death, and a mouse inoculated with this culture died within twenty-four hours, and pneumococci were found in its blood and lung tissue. The pericardial effusion and pus from the lungs inoculated on gelatine developed streptococci and

pneumococci. Horizontal layers of pneumococci mixed with chains of streptococci were found in the deeper layers of the skin, at the boundary of the subcutaneous cellular tissue. The hemorrhages were situated under the papillæ. The extravasated blood corpuscles were interesting on account of their yellow tinge. There were no microbes in the neighborhood of the hemorrhages. The epidermis was elevated. The author found rows of streptococci in the bronchial tubes, and especially in the lumen of the blood vessels, in the center of the blood corpuscles, and in the alveoli.

The bronchi were dilated, accompanied by a great expansion of the blood vessels.

The spleen was somewhat enlarged, and contained no microbes. The liver was normal, no fatty degeneration was present, nor were there any microbes.

The case was one of infectious purpura, which in the beginning was diagnosed "tuberculosis." The period of infection was a very lengthy one (thirty-six days up to death), caused by two conjoined microbes, the strepto- and the pneumococcus. The starting points of the septicemia were the dilated bronchi, from where the microbes were carried under the skin by the blood current.

The author especially points out that Claude and Claisse had already observed the presence of these microbes in purpura. They had, however, never been demonstrated up to now in the sections of the skin. He calls special attention to the seat of the hemorrhage (in the upper portion of the subcutaneous cellular tissue) in which the microbes of erysipelas also have their seat. Microbic emboli and thrombi of the vessels were not present.

THE SPECIFIC ACTION OF QUININE IN MALARIA.

Dr. E. C. REGISTER, editor of the *Charlotte Medical Journal*, read a paper with this title before the North Carolina Medical Society.

After many years of study, both clinical and microscopical, the doctor arrives at the following conclusion in reference to the specific action of quinine in the continued forms of malarial fever. He says a malarial fever without complications will subside after the plasmodia of malaria disappears from the blood; that we have in quinine the means to completely eradicate malarial poison from the body; that malarial fever occurring in a previously healthy subject, and in the central United States, if at once recognized and properly treated, never ends in death; that it is speedily curable, never continues, provided the nature of the disease be recognized and appropriate treatment employed.

Dr. Register has made microscopical examinations of the blood of several hundred patients suffering with remittent mal-

arial fever, and has studied closely and thoroughly the crescentic and ring-shaped bodies which he says are the forms of the parasite which is responsible for the continued types of this fever, and he finds that the reason quinine does not always affect these irregular forms of the poison, is on account of the usual defects in its administration. He contends that the drug is very imperfectly absorbed when given by the stomach, and when the patient has a temperature of over 102 degrees. He says that in cases of continued malarial fever, if distinct and well marked intermissions of the fever are produced artificially by the use of antipyrine, antifebrine and phenacetine, the crescentic and ring-shaped bodies will disappear after the administration of quinine, as quickly as the spherical bodies that are found in an ordinary case of intermittent fever. In reference to the belief that the forms of the parasite that inhabit the blood cells are not acted on by quinine, he says: "There is no doubt in my mind that this belief is not erroneous. Besides my own observations, I have been able to collect the opinions of thirty-two authors touching upon this point, and twenty-eight out of the thirty-two believe that the endo-globular or intra-corpuscular forms are not, on this account, the cause of an uncontrollable fever, and that its proximity to the blood cell does not, in any way, protect it from the action of quinine."—*St. Louis Medical Era*.

STAPHYLOCOCCUS INFECTION.

V. HUTINEL and M. LABBE (*Revue mens. d. malad. de l'enfance*, 1897, xv, 35) say that the staphylococcus is the carrier of general infection, especially in the child. It is either derived from a contagion or from the mouth, duodenum, or respiratory tract (therefore from the body itself). The infection is favored by local or general causes. Of the first may be mentioned: the age of the child (the younger it is the less is its resistance), dentition, growth, acute febrile disease (pneumonia, typhus), and chronic diseases (catarrh of the stomach and of the intestines, dilatation of the stomach, syphilis, especially tuberculosis).

Local causes were: wounds of the umbilical cord, ulcers, erythemas of the buttock and thigh, varicella, diseases of the skin (impetigo, pemphigus, lymphangitis, eczema, itch, etc.); and in the adult—herpes, lymphangitis, furunculosis, anthrax). The point of entrance was found to be the skin, in all diseases which injure the skin; the inflamed, spongy mucous membranes in diseases of the lung, particularly dilatation of the bronchi; and the mucous membrane of the ear in catarrh.

If the staphylococci act by their multiplication, septicemia is produced; if they form toxines (that is, disintegrate), toxemia is the result.

To produce an infection they must gain entrance to the general circulation, and this may either be accomplished by way of the lymph-channels and thus into the subclavian vein, or directly through the blood vessels.

Death by toxemia is due to multiple abscesses of the organs of nutrition, particularly to degeneration of the liver and kidneys. Septicemia shows itself—

1. By multiple abscesses of the skin and the connective tissue of the organs of nutrition.

2. By pemphigus eruptions (not to be confounded with the acute pemphigus of the new-born).

3. By pseudo-erysipelas, and

4. By localized spots of gangrene over the skin. The chronic form comes on gradually, and lasts three to six months; the acute form is, as a rule, fatal; the subacute form terminates in death after one to three days.

The authors enumerate the known symptoms of the diseases of individual organs as they usually occur in septicemia, etc.

Treatment.—Perfect isolation, antiseptic dressings, scrupulous cleanliness, repeated disinfection of the sick room, baths, antiseptic skin powders, and the injection of antitoxic serum.

HYDROTHERAPY IN CHILDREN.

GUTTMANN, of Breslau (*Der Kinderarzt*, 1897, *lxxxvii*, 50), says that probably most physicians who have adopted the hydrotherapeutic treatment as an addition to their curative agents, have followed the same course and made their first experiments with this treatment in the diseases of childhood. Numerous reasons for this may be found. In the first place, diseases of children usually constitute the greater portion of a young doctor's practice. There are still greater advantages present in the treatment of children, especially as regards hydrotherapy. For one thing, the complicated technique of hydropathic treatment is much simplified in its application to children, and can be much easier studied and applied.

On account of the smaller size of the child the procedures, as packs, applications to the thorax, etc., demand only little time and trouble; the necessary auxiliaries, like toweling, sheets, tubs, are on account of their smaller dimensions much easier procured for the child than for the adult; assistants are only rarely required. Compare only, for example, the great difficulties to be encountered in bathing a seriously ill adult at his home—how he must be taken out of the bed, and carried back again with the assistance of a number of persons; how he must be held in the tub; the laborious manner of procuring the large quantity of water necessary, and, finally, the difficulty of finding a bath-tub, with the simple conditions for bathing a child.

It is not to be wondered at, therefore, that the physician as well as the family are more readily inclined to apply the hydrotherapeutic treatment to children. Moreover, we are assured that the effect of the application of water in children is without doubt more prompt than in the adult, in whom reaction on account of the manifold variability of temperature and weather, to which he has for many years been exposed, does not so readily take place. Finally, and this is probably most important, the pathology of childhood seems to suggest the use of hydrotherapeutics, as it presents with especial frequency two continually recurring symptoms, which are favorably influenced by hydiatic measures, and unfavorably by drugs, namely, fever and conditions of excitement. Although these are only the symptoms of a disease, they require, nevertheless, individual considerations, in that they often dominate the diseased condition. As to the treatment of these symptoms in the childish organism by drugs, Soltmann says of the antipyretic remedies that although they may rapidly and promptly produce a marked reduction of temperature, even of 4° , they exert absolutely no influence whatever on the disease process, that is, on the specifically infectious virus which is the cause of the degenerative processes. On the contrary, they are strong poisons to the protoplasm, and may produce grave nervous disturbances, and hasten *collapse*. With even greater fervor does this author criticize the use of sedatives (narcotics). He explains the reason the expert is so careful in prescribing narcotic remedies, especially opium and its derivatives, by the specifically poisonous effects which they are known to have on certain parts of the central nervous system of children.

AN ADDITION TO THE PATHOLOGY AND THERAPEUSIS OF CONGENITAL LUXATIONS OF THE FEMUR.

KARL ROSER (*Deutsche med. Wochenschr.*, 1897, xxiii, 61) says that the characteristic walk of congenital luxation of the thigh and the lordosis may be referred to the fact that the center of gravity of the thorax lies anterior to the line of junction of the heads of the femur. The dislocated head finds no firm point for support, the abductor muscles have not the power to exert a leverage; the thigh and pelvis are therefore unable to support each other. As soon as the other leg is raised, the pelvis on the diseased side is lowered, and to compensate for this, the patient assumes the position of lordosis of the back.

He treats this luxation as he would a neglected traumatic one, splits the joint by an oblique incision anteriorly, forms a new acetabulum by means of the sharp spoon, reduces it in the usual way, stretching, however, both the capsule and the adductor muscles by adduction.

Dressing and After-treatment.—Too little attention has thus far been given to the knee- and ankle-joints; the first is to be gradually flexed to its maximum extent; in the latter the inclination to the formation of talipes equinus, on removing the bandages, must be obviated. The success of this method has been thus far encouraging.

CONTRIBUTIONS TO THE PATHOLOGY, PROPHYLAXIS AND
THERAPEUTICS OF APHTHOUS STOMATITIS OF THE
NEW-BORN.

GROSZ (*Jahrb. f. Kinderheilk'nde*, 1896, *lxii*, 2) says that stomatitis is of a parasitic nature; the germs of the *oidium albicans* are present in the atmosphere, and are carried by the latter into the mouths of infants. The infection may pass from infant to infant in this manner and may become endemic. He has observed an epidemic in an institution which was rather protracted, and gives the result of his experience.

The age of the infant is the chief predisposing cause. This is due to the fact that the surface of the mucous membrane in the first two or three days after birth, even under normal conditions, is in a state of desquamation, and hence furnishes a favorable soil for the settlement of the *oidium albicans*. For this reason the first symptoms of aphthæ make their appearance nearly always at the tip of the tongue and its ligaments, as well as on the inner surface of the lips, on such spots where the desquamation of the mucous membrane is especially favored by the movements in suckling. Other predisposing causes are disturbances of digestion, bad hygienic conditions and uncleanness in nursing. The prophylactic mouth washes advocated by some authors are therefore rejected as unnecessary, perhaps hurtful, and in some cases even dangerous. For no matter how carefully they may be used, they are apt frequently to cause injuries and ulcerations of the very sensitive mucous membrane, and lead indirectly to a general infection of the organism. An experience of many years has shown that stomatitis, as well as Bednar's aphthæ, are very seldom met with where mouth washes are not employed. Of much greater importance is the cleaning of the nipple before and after nursing, or the cleaning of the mouth-piece of the nursing bottle in artificial feeding. As a last resort he makes use of the following prophylactic measure, which is pursued daily from the first day after birth: a brush, dipped into a one per cent. solution of nitrate of silver, is first touched to the tip of the tongue, and as the infant makes suckling movements on removing the spatula, the brush is thus pressed on by its lips. In this manner the solution is brought in contact with nearly every portion of the mouth. After five to six days a thin, scaly coating is produced through the repeated action of the nitrate of silver. This will in a short

time peel off and reveal a clean, normal mucous membrane. The cases of aphthæ diminished rapidly at the clinic after the paintings with nitrate of silver were resorted to.

When aphthæ are already present, they are treated in the following manner:

1. Cleansing of the mouth with a solution of borax of 1 to 2 per cent., which should be done with the greatest care.
2. Painting of the mouth daily with a three per cent. solution of nitrate of silver. In no case were any bad results recorded, and the general health of the children was in no way disturbed by it. In some cases healing very rapidly resulted, and the mucous membrane became perfectly clear in two to three days; others, however, were only amenable to the treatment after a number of days. The paintings are without doubt to be preferred to the washing.

TREATMENT OF PERITONSILLAR ABSCESS.

KILLIAN (*Münch. Med. Wochenschr.*, 1896, *lxiii*, 696). On account of the manifold dangers connected with peritonsillar abscesses, evacuation, as early as possible, is to be secured. The typical seat is in the supratonsillar fossa, which is usually obliterated by the process, and there may even be formed a convex bulging. The superior portions of the faucial pillars as well as the uvula are separated from before backward, and are red, swollen and edematous. The faucial tonsil, as a rule, is pushed inward and downward. In opening these abscesses he has, during the past year, pursued the following course: After previously cocainizing the parts, a thick, stiff sound is passed into the *fossa supratonsillar* is and carefully pushed outward and slightly upward. Frequently only slight pressure is necessary to reach the abscess through the diseased tissue. If pus makes its way out beside the sound, a closed forceps is passed into the abscess, and the latter dilated in a direction from above downward. In this manner we may obtain a thorough evacuation of the pus. On the following two days the forceps is again introduced and the patient is directed to gargle in the usual manner. Should the abscess extend downward, the same thing may be done in a similar manner, passing the probe diagonally through the tonsil, whose tissue will frequently be found exceedingly rotten and boggy.

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ORIGINAL ARTICLES.

CONTRIBUTIONS OF BACTERIOLOGY TO THERAPEUTICS.

THE WESLEY M. CARPENTER LECTURE FOR 1897.

By

WM. H. PARK, M.D.,

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(Concluded.)

Streptococcus Infections.—Streptococci, according to the degree and quality of their virulence, the region and method by which they gain entrance to the body, and the susceptibility of the tissues invaded, produce lesions of great variety in kind and gravity.

Thus most forms of tonsillitis, erysipelas, cellulitis, abscess and septicemia, are due to streptococci, while other diseases, such as broncho pneumonia, endocarditis, arthritis, etc., are also frequently caused by them alone or associated with other organisms.

In none of the streptococcus inflammations do we notice much apparent tendency to the production of immunizing and curative substances in the blood.

Severe general infections usually progress to a fatal termination after a few days, weeks or months. It is true, however, that cases of erysipelas, cellulitis and abscess, after periods varying from a few days to months, tend to recover, and to a certain extent, therefore, we may assume protective processes have been called forth. In these cases, however, we know from experience that faulty treatment would, as a

rule, cause the subsiding infection to again progress and that to perhaps a more serious extent than the original attack.

Koch and Petrusky tried a most interesting experiment. They inoculated cutaneously a man suffering from a malignant tumor with a streptococcus obtained from erysipelas. He developed a moderately severe attack which lasted about ten days. On its subsidence they re-inoculated him; a new attack developed which ran the same course and over the same area. This was repeated ten times with the same results.

This experiment proved that in this case at least little if any curative or immunizing substances were produced by repeated attacks of erysipelas, and that the recovery from each attack was due to local and transitory protective developments.

The severe forms of infection, such as septicemia following injuries, operations and puerperal infections, show little tendency to be arrested after being well established. Having then in remembrance the above facts, let us consider the results already obtained in the experimental immunization and treatment of animals and men suffering from, or in danger of, infection with streptococci. Two methods have been used for the immunization and attempt to produce curative substances in animals. Either the bouillon culture of a virulent streptococcus is filtered or heated to 55° C. so as to eliminate the living streptococci without altering the bacterial products, or the living virulent streptococcus itself is injected. Marmorek (*Annales Inst. Pasteur, July, 1895*) has probably given more attention to the production of a curative streptococcus serum than any other single person. For reasons which will be mentioned later I think we can get a clearer idea of the difficulties in the way of obtaining a streptococcus serum, and of estimating its value by considering some experiments carried on in the laboratories of the New York City Health Department. Dr. A. W. Williams, who has carried on these experiments, has kindly permitted me to quote a few of the results obtained by her.

Experiment A. Four rabbits received subcutaneously $\frac{1}{4}$ cc. of the serum of a sheep that had been immunized, and then immediately afterwards a second injection in a different portion of the body of one hundred times the average fatal dose of a very virulent streptococcus. These rabbits all remained alive. Two rabbits were injected as controls with simply the

average fatal dose without the serum. These both died of septicemia in two to three days. Three others received normal horse serum along with one hundred times the average fatal dose of streptococcus. These died as promptly as those receiving no serum.

The protective power of this sheep serum, as shown by repeated experiments, was uniform and unmistakable. Serum from the same animal two months later had, however, little appreciable effect. Also the serum taken from the same vials which had given us results in June was found to have very little effect in September. Serum given me lately by Marmorek himself, and considered by him to be of very high grade, proved when tested here two months later to be without appreciable effect against the streptococcus used by him to develop his serum. Some serum received from him one year ago apparently possessed slight immunizing power. Other experimenters to whom Marmorek has sent his serum have had similar results.

The streptococcus serums upon the market have all been tried by Dr. Williams, and none of them have shown any certain curative or immunizing power against our streptococcus. The most that the most active accomplished was to retard death in a certain proportion of cases. The rapid deterioration of serum in vials may account for the absence of curative power in the serums.

To estimate the present and future value of anti-streptococcus serum is a matter of the utmost difficulty. Many of the cases reported are of little or no help, because, on account of no cultures having been made, we are in doubt as to the nature of the bacterial infection. Even when bacteriological examinations are made during life in cases of septicemia, they are apt to fail to give us any information. Under Marmorek's supervision many cases have been injected; thus even as far back as June, 1895, when his last statistics were published, he had treated 96 cases of scarlet fever, 411 cases of erysipelas, 16 cases of puerperal fever, and smaller numbers of cases of tonsillitis and of post-operative septicemia.

Since then he has treated many forms of phthisis. In all these cases marked improvement is reported to have followed when they were due to streptococci. Thus in 16 cases of puerperal fever 7 were due to streptococcus alone.

All these recovered. Three were due to the streptococcus and colon bacillus, and one to the colon bacillus alone. These four all died. In five streptococci were associated with staphylococci. Two of these died, three recovered.

In phthisis where no cavities have as yet appeared the fever and sweats lessened and all symptoms improved. He did not state that any cases were absolutely cured.

In the few cases, sixteen in all, of puerperal fever, wound infection, scarlet fever and broncho-pneumonia that I have seen under the treatment, the results have not been uniform.

In only two cases did I see results which appeared to be distinctly due to the serum. Both were cases of puerperal fever.

In one, treated at the Presbyterian Hospital, where chills had occurred twice daily for ten days, they ceased absolutely for two weeks, under daily doses of twenty to fifty cubic centimeters. The temperature, though ceasing to rise to such high elevations, did not average one degree lower than before the injections. The serum treatment was kept up for two weeks and then dropped. The case is still, after six weeks, running a high temperature.

In another puerperal case the temperature fell immediately upon giving the first injection of serum, and after two subsequent injections remained normal, and the case seemed greatly benefited. In neither of these cases, the one being treated at the Presbyterian Hospital and the other by Dr. Richards, could any streptococci or any other organisms be obtained from the blood. On broncho-pneumonia I have seen absolutely no effect.

The results obtained here in New York by both physicians and surgeons have not on the whole been encouraging.

In some of the cases where apparently favorable results were obtained other bacteria than streptococci were found to be the cause of the disease. I believe that the following conclusions will be found to be fairly accurate.

The preparations of anti-streptococcus serum now on the market are either quite weak or entirely wanting in curative substances. We are justified in using serum only when it has been recently tested and shown to have some value in preventing infection in animals, and that we should, in so far as possible, establish the variety of bacteria causing the infection in

every case in which the serum is used. The period during which a curative serum preserves its strength and the question as to whether the immunizing strength shown against one variety of streptococcus is equally affective against all streptococci, needs far more study.

The treatment of malignant tumors by the mixed streptococcus and prodigiosus toxins.

Fehleisen's discovery that an attack of erysipelas sometimes retarded the growth of sarcomatous tumors has been substantiated by several observers. In this country the experimental work upon this subject and the actual treatment of cases has been largely carried out by or under the direction of Dr. Coley. He has kindly sent me the following notes upon his results.

"The improvement and inhibitory action which the toxins have upon carcinoma have proved to be, in nearly all cases, but temporary, and in no case has the disease remained in abeyance sufficiently long to be regarded as cured.

On the other hand, in sarcoma, which is the only form of malignant tumor in which I have advocated the treatment, sufficient time has elapsed to enable us to draw the following conclusions.

The toxins injected subcutaneously into the tissues, either into the tumor substance or into parts remote from the tumor, exercise a distinctly inhibitory action upon the growth of all varieties of sarcoma. This action is the least marked in melanotic sarcoma, and thus far no cases of this form of tumor have disappeared under the treatment. The influence of the toxins upon round-celled sarcoma is much more powerful than it is upon melanotic, although distinctly less than upon the spindle-celled variety. A number of cases of round-celled sarcoma in which the diagnosis was unquestioned disappeared and the patients have remained well beyond three years. Nearly half of the cases treated showed no appreciable decrease in size; the majority of the others which did show marked improvement at first, after decreasing in size for a few weeks, again began to increase and were no longer influenced by the treatment.

In half of the cases of spindle-celled sarcoma treated by the toxins, the disease has disappeared entirely, and the majority of the successful cases have remained well sufficiently

long to justify their being regarded as cured. It should be distinctly stated that all of the tumors under consideration were inoperable, as I have never advised treatment except in such cases.

It is a curious fact, from the standpoint of pathology, that the largest percentage of successful cases has occurred in the spindle-celled variety, the very one in which errors of diagnosis are practically impossible. In addition to microscopical examinations by the best of pathologists, the malignancy of the tumors was further confirmed by the characteristic clinical appearances, and in many cases by a history of repeated recurrences.

My own successes have now been confirmed by a considerable number of other observers, among whom I will mention the two successful cases of Dr. John E. Owens, Professor of Surgery at the Northwestern University of Chicago; Attending Surgeon to St. Luke's Hospital. Before the Illinois State Medical Society, in June, he reported two cases—one a round, the other a spindle-celled sarcoma—in both of which cases he avoided amputating the leg by the use of the toxins, the tumors having disappeared under the treatment, and the patients both being well two years later.

I have now three cases of spindle-celled sarcoma which have remained well beyond three years; one case of mixed (round and spindle) celled, which, after remaining well three and one-fourth years, had a return in the abdomen, and died about eight months later. This case certainly would establish the correctness of the early diagnosis."

Dr. Coley would be the first to acknowledge that even the very moderate claims put forward in this communication are disputed by many surgeons, they claiming that the disappearance of the tumors are due to other causes than the treatment. In spite, however, of the treatment being sometimes deleterious to the general health, and the occurrence from time to time of the spontaneous disappearance of apparently malignant tumors, I think we must allow that the proof is very strong that some sarcomatous tumors have been arrested and caused to disappear by the toxin injections, and that where they are clearly inoperative and progressing the treatment should be tried.

Tuberculosis.—In all its varied manifestations in man

and animals tuberculosis is now admitted to be caused by the tubercle bacillus.

Either at the commencement of the infection or at any stage in its progress other micro-organisms may become associated with the tubercle bacillus, and their deleterious effects may even predominate in importance.

An examination of tuberculous cases has shown that tuberculous diseases of the glands, bones and joints frequently become arrested without treatment. The same is true probably in from ten to twenty per cent. of cases of pulmonary tuberculosis. Natural cure or arrest is, however, the exception rather than the rule in the majority when the lesions have advanced far enough for detection, nor can we state from experience that any permanent immunity is present in arrested cases. It is well known that many readily contract tuberculosis a second time. Koch believes that even and perhaps chiefly in the very worst cases a tendency to immunity is noted, for in miliary tuberculosis before death the abundance of bacilli is greatly lessened apparently by bactericidal influences.

The immunization process, if it is such, comes too late, however, to prevent the fatal termination.

The study of tuberculous processes in man, in spite of their subacute course, inclines us to approach the subject of treatment by injections of bacterial products or serums with but moderate hopefulness.

If by any means we can render the tissues slightly more resistant, or the fluids slightly bactericidal, we may be able to arrest or turn back an infection which would otherwise slowly progress.

Koch's Tuberculin.—The first preparation which was made by evaporating at fairly high temperatures old tubercle cultures to one-tenth of their bulk will probably be largely displaced by the new except for diagnostic purposes.

The method of treatment and the results obtained from the old tuberculin are thus lately described by Koch:

After each injection, which should be large enough to cause a slight but not a great rise of temperature, a noticeable improvement in the tuberculous process follows. The amount of tuberculin injected is continually increased so as to continue the moderate reactions.

After several months all reactions cease, the patients having become immune to the toxin. Further injections are now

useless until this immunity has passed. During the treatment the bacilli themselves have not been directly affected, and when the treatment is interrupted the tuberculous process is apt to progress.

Many cases, however, of pure tuberculosis become cured or greatly benefited by several periods of treatment.

The substances produced in the body by the old tuberculin neutralized the tubercular toxins, according to Koch, but were not bactericidal.

After a series of experiments he found the difficulty to be due to the nature of the envelope of the tubercle bacillus which made it difficult to obtain the substance of the bacilli in soluble form without so altering it by heat or chemicals, that it was useless to produce immunizing substances.

He believes immunity is not produced in man, for possibly somewhat similar reasons, the bacilli never giving out sufficient toxin to cause curative substances to be produced.

The new tuberculin is a watery extract of the soluble portions of the unaltered tubercle bacilli. To prepare it the bacilli are dried in a vacuum, ground in an agate mortar, placed in distilled water and centrifugalized. The sediment is removed, dried, ground again in the mortar, placed in sterile water, and again centrifugalized. The clear upper fluid containing the soluble portion of the bacilli is the new tuberculin. As can be readily seen, in a preparation thus made, contamination is difficult to avoid, freedom from intact bacilli is uncertain, and the strength of the solutions prepared at different times is variable.

Twenty per cent. of glycerin is added to preserve the tuberculin from contamination. More glycerin would precipitate the active immunizing substances.

With the old tuberculin, fever reaction was expected and necessary to obtain healing results. With the new it is unusual and not needed. The new tuberculin is said to be strongly immunizing, the old but slightly so.

The solution is supposed to contain in 1. cc. 10 milligrammes of solid substance. The initial dose is 1-500 m. g. To allow of accurate measurement the tuberculin is diluted with normal salt solution. The dose is gradually increased and is given about every other day. Temperature reactions of over $\frac{1}{2}^{\circ}$ are to be avoided. The amounts

increase in about two months up to 20 m. g. of solid substance, the full dose. After that, long pauses are allowed between the injections.

To immunize small animals, 1 to 2 m. g. are given repeatedly. When we look for the experimental work on animals we are disappointed to find only a general account given.

Koch states that animals receiving large doses for two or three weeks before being injected with tubercle bacilli proved to be immune. Those treated with the tuberculin not later than two weeks after infection were cured. Treatment begun later was without avail.

He states, treatment in man must also be begun early. Those far advanced, or those suffering from mixed infection, are beyond help from the new tuberculin. Those also whose temperature rises above 100.4° are as a rule unfit for the treatment.

In lupus cases and in cases of phthisis selected according to the above conditions Koch has seen marked improvement in every case. No bad symptoms were noted in any. All gained in weight and appetite and the physical signs improved.

As to other preparations of tuberculin we are probably safe in saying that none of them are better than Koch's.

As we look at Koch's claims, we note first that he gives no hope of benefit in fairly advanced cases of pure tuberculosis or in any cases where mixed infection has become marked. This excludes at once a large number of the cases when we first see them for treatment.

The curative results obtained in this country with the old tuberculin have been very slight. In some sanatoria apyretic cases properly selected, have been treated with tuberculin with apparently some benefit. In private practice its dangers have been considered by most to be greater than its benefits. The new tuberculin is stated by Koch to be free from the dangers of the old, and also to give greatly increased benefits, that is, not only to neutralize the poison produced but also to directly kill the bacilli, through the substances produced by the body cells from the tuberculin.

As before stated, from the method of preparation we should expect that it would be extremely difficult to prepare uniform and sterile solutions. That prepared under Koch's

personal supervision may have had these characteristics, but that sent out by the manufactory has neither of them.

Many reports sent out have shown that a patient showing no reaction from the solution contained in one vial would have very severe and sometimes dangerous symptoms produced by the same quantity from a new vial.

*Drs. Trudeau and Baldwin have found the new tuberculin in the majority of vials obtained by them until the first of August to be contaminated. Others have had similar experiences.

The above named authors discovered that when the contents of the vials as obtained from the factory are centrifugalized many samples will be found to contain tubercle bacilli. Further, some of these bacilli are shown to be alive and capable of causing infection. Two out of five of the guinea pigs which were being injected according to Koch's directions with the new tuberculin in order to test their immunity later against tuberculosis were found to have developed tuberculosis from the bacilli contained in the tuberculin. The remaining three have since been inoculated along with controls and have thus far shown no immunity.

When it is remembered that the bacilli from which tuberculin is made are highly virulent, the injection of them into patients is certainly a real objection to the treatment until such improvement in its manufacture shall be made as to insure its safety.

The reports from the other side are as yet conflicting. Lupus seems to be decidedly benefited, even more than by the old tuberculin. Some advanced cases, however, resist, and already some tendency to relapse has been noted. On phthisis, laryngeal tuberculosis and other tuberculous processes no definite opinion has yet been formed by many who have the best means for observation. Some report marked improvement in suitable cases, others little or none. All urge great care in increasing the dose injected, especially from new vials.

From Koch's reputation we certainly have reason to believe his statements and to hope that with such improvements as seem necessary to insure a sterile preparation, we may hope in the new tuberculin to have a real help in hastening the recovery of the more favorable cases.

*Reference, *Med. News*, Aug., 1897.

The Serum Treatment of Tuberculosis.—The attempts to obtain from animals, chiefly horses, a serum which would be antitoxic or bactericidal have been carried out along much the same lines as Koch's experiments upon man.

The methods adopted have been as follows:

Old cultures of tubercle bacilli grown in 5 per cent. glycerin bouillon have been filtered either with or without previous boiling and then injected into animals. This process being similar to Koch's, with his first tuberculin. Others have injected living virulent or non-virulent tubercle bacilli either alone or with their culture fluids. This, like Koch with his new tuberculin, being an attempt to get from the unaltered products and cell contents of the bacilli the formation in the body of bactericidal or immunizing substances.

Since 1890 attempts have been made to treat human and animal tuberculosis by means of serums from animals thus treated.

Among the many claiming good results in man or animals are Hericourt, and Richet, Bernheim, Maragliano, Viquerat, Paquin, De Schweinitz and Dorset, McFarland and others.

The majority claim for their serum the power to neutralize the effect of tuberculin when injected into tuberculous guinea pigs.

This test is insufficient and probably valueless since tuberculin is not the same as the unaltered products of the tubercle bacillus, and since it has been further shown by Trudeau and Baldwin that other substances which have no specific properties whatever will have the same effect as the serum under certain conditions.

Some make the further claim that guinea pigs injected with the serum acquire an immunity to the virulent tubercle bacillus, and that those already infected live longer than the controls which receive no serum, or as Niemann (*Münch. Med. Woch.*, Jan. 19, 1897), to be able to cure animals eighteen days after inoculation with a culture of tubercle bacilli which kills untreated pigs in fifteen weeks. Niemann also states that he has treated early cases of phthisis with good results. Very few observers have been able to obtain appreciable results with serums obtained from the different experimenters.

As in the treatment of other diseases it is difficult to arrive at the exact truth when we find the testimony so con-

flicting. A few weeks ago, when at Saranac Lake, I was shown the results of animal experiments with a number of serums whose manufacturers claimed them to be curative. None of them stayed the progress of tuberculosis in the animals treated. They also showed me some clinical histories of certain patients free from mixed infection who received serum treatment. No results were apparent, either beneficial or harmful. The disease had continued to progress steadily in one of the cases where the lesions appeared to be those of pure tuberculosis, and where the patient was in good general condition.

From the information so kindly furnished me I think that we must consider that most of the preparations of anti-tuberculous serum now on the market are little if any superior to normal horse serum.

As with the new tuberculin, so it probably is with the best of the serums, that they have feeble immunizing power, but that this power is so weak and also perhaps so transient as to make it uncertain whether the slight results to be hoped for in a few favorable cases warrant us in urging the treatment. The treatment with both should, I believe, still be considered in the early experimental stage. With both the new tuberculin and the anti-tuberculous serum we should try to observe the results with unbiased judgment, as it may well be that both will prove useful in proper cases.

Plague.—Upon the plague we may note that it is now known to be due to a specific bacillus and that the infection is transmitted, not only by the infected bodies of diseased men, but also by rats, mice and flies.

Roux, Yersin and others have obtained from animals immunized by injections of the living plague bacilli, and by their toxins a serum which is quite antitoxic and bactericidal.

From one-tenth to one-fortieth of a cubic centimeter of the serum prepared by them immunized mice against ten times the fatal dose of toxin or of the living virulent bacillus.

Of 500 exposed persons receiving preventive inoculations of the serum only five contracted the disease, of which three died.

This serum is sufficient in a dose of 10 cc. to protect monkeys from infection, and in 20 cc. to cure them two days after an inoculation. The plague runs a course in monkeys

very similar to that in man and kills the animals about five days after infection.

The mortality among 149 cases of the plague in man treated by the serum was 49 per cent., against about 80 per cent. in untreated cases. In those treated in the first stages, some of the results were very striking. It is only fair to state that this serum was very weak, having been sent by Roux because of the urgent demand for it.

A stronger serum prepared on the spot by Yersin gave much better results in a very limited series—only two deaths in 26 cases.

Haffkine's treatment, by injecting the dead bacilli into man, was tried on 1,300, who were exposed to infection. Twenty-five of this number contracted the disease and died. As compared with an equal number of persons exposed to the same conditions, some immunity seemed to have been produced by the treatment. The symptoms following the injection were of fever and prostration, lasting, as a rule, one to two days. Exceptionally the symptoms continued a week and were quite severe.

Typhoid Fever and Cholera.—Infections due to the typhoid bacillus and the cholera spirillum may be considered together for the results obtained in the immunization of animals by the injection of dead or living bacilli have been similar. Animals can be immunized to both organisms, and their serum will be found to contain feeble antitoxic and moderate bactericidal properties.

Pfeiffer injected three men with dead typhoid bacilli according to Haffkine's method, in cholera and the plague, and found that curative substances developed in the blood after the lapse of a few days.

We should judge from animal experiments that injections of the serums, or of the dead bacteria, into man would produce a fair degree of immunity for some weeks.

The treatment of typhoid fever and cholera with serum injections has not shown any marked results, although a few observers have claimed the disease to have been shortened.

Hydrophobia.—Although no form of micro-organism has yet been discovered in the brain or spinal cord of men or animals attacked by hydrophobia, nevertheless we are certain

that one exists, for the disease is so certainly transmitted from animal to animal in characteristic form that skepticism is impossible.

The preventive treatment, instituted by Pasteur, has been subjected to an immense amount of criticism; but I believe its efficacy is to-day fully established. Two objections have been made to the treatment. One, that the proportions of cases developing after being bitten, was as large in those treated as in those not treated; and second, that some who would not have developed hydrophobia from the dog's bite developed it from the injections of the virus.

As the Health Department intends soon to offer the Pasteur treatment to all who desire it, these criticisms have naturally interested us greatly.

During a visit at the Pasteur Institute in Paris, this summer, I carefully inquired concerning these points. It was stated to me that the apparent diminution in the percentage of those developing hydrophobia, after bites by rabid animals, was so great that it was impossible to believe it was due to misinformation as to the extent it formally occurred.

They stated, however, as an interesting fact, that from time to time a person infected developed rabies two weeks or more after having passed through the whole course of treatment. That is at a time when the immunization should have been at its height.

As to the possibility of producing hydrophobia by the injections, they believed it had never occurred in the thousands of cases treated at the institute. Similar testimony comes from all the other institutes.

In order to test experimentally the immunizing value of the Pasteur treatment numerous experiments have been carried out in the Research Laboratory of the Health Department by Drs. Wilson and Cabot, assistant Bacteriologists.

These, though not yet completed, show striking evidence that the injections do produce immunity, and that when properly carried out they are without danger, even in very susceptible animals.

The following report of a series of experiments carried out by Dr. Wilson, have been kindly furnished me by him as an illustration, and are very instructive.

Experiments on guinea pigs with the preventive treatment of rabies:

No. of pigs receiving Pasteur's treatment without subdural inoculation:	7	Deaths	0	Surviving	7
No. of pigs receiving subdural inoculation without treatment:	5	"	5	"	1
No. of pigs receiving subdural inoculation with preventive treatment prior to subdural inoculation only:	8	"	7*	"	1
No. of pigs receiving inoculation into the posterior chamber of the eye without preventive treatment:	2	"	2	"	0
No. of pigs receiving inoculation into the posterior chamber of the eye; receiving preventive treatment:	6	"	3*	"	3
No. of pigs receiving preventive treatment both before and after subdural inoculation:	3	"	0	"	3

*Death delayed.

So far as is known to the speaker there are no other diseases besides those already mentioned in which bacterial products are of any practical therapeutic value. The advances in our knowledge concerning the relation of bacteria to disease have aided our efforts to avoid the communication of disease more than to prevent the development of an infection already acquired, and to arrest the progress of an infection more than to cure the disease when established.

Thus, by disinfecting the feces and urine of typhoid and cholera patients we avoid the danger of contaminating drinking water by the stools of typhoid or cholera patients, because of our knowledge of the infectious nature of the sputa of consumptives and of the secretions of convalescent cases of diphtheria we are able to take much more successful precautions against the spread of these diseases than formerly. The surgeon and obstetrician also realize now not only the danger of bacterial infection, but how to avoid it.

Such measures as the extinction of tuberculous cattle and the pasteurization of milk insure the purity and wholesomeness of our milk supply.

When infection has already taken place but no lesions have developed, we are able in many instances to produce

immunity and thus prevent the development of the disease, as for example, in hydrophobia, small-pox, diphtheria, etc.

When the disease has become established our resources are fewer. Diphtheria, tetanus and the plague being the only ones where we can be fairly sure of results from serum treatment.

Much surgical treatment, however, really owes its value to its influence upon the bacterial infection. By removal of infected pus, relief of tension in the tissues, and by other means surgeons prevent, arrest, or remove a streptococcus, anthrax, tuberculous or other infection.

As to the future—the outlook is bright for obtaining through serums or through the toxic substances of the micro-organisms themselves means for immunizing against most, if not all, of the diseases due to micro-organisms.

This immunity in most diseases due to bacteria will not be, however, of long duration. This drawback can be overcome by repeating the inoculation.

. When we have discovered the micro-organisms causing scarlet fever, measles and the other diseases in which a prolonged immunity follows recovery from infection, we may hope to obtain vaccine as efficient as that now used in small-pox.

The prospect of obtaining serums which will promptly arrest the further development of diseases already established by the destruction of the micro-organisms and their poisons already existing in the body is rather less encouraging than it appeared to be shortly after the discovery by Behring of the diphtheria antitoxin.

We must remember that all we can hope for is to stop all growth of the micro-organisms and prevent further action of the bacterial poisons, at the moment when we treat the case. We cannot hope to beneficially affect the tissue cells or the activity of organs except that by obliterating certain deleterious products we allow the body processes and other therapeutic helps a better field for success.

From the fact that we have obtained from bacterial products a number of substances each of which inhibits on the body the growth of some one species of bacteria without affecting other bacteria or the tissue cells, it seems to me a possibility, though perhaps not a probability, that some-

time in the future we may find chemical substances which will have these specific bactericidal properties.

In closing I wish to speak a word of caution as to the indiscriminate use of the various so called antitoxic serums.

The different preparations of diphtheria and tetanus antitoxins are, for the most part, reliable and up to the strength claimed for them.

The other serums are, however, unreliable either because, as in the case of anti-steptococcus serum, they lose in a few weeks the feeble immunizing substances which they at first perhaps possessed, or as in the case of anti-syphilitic serum, they probably never had any virtue whatever.

Experimental work upon the development of immunizing serums and bacterial products is necessarily very expensive and cannot be carried on with the hope of any financial profit. We must look, therefore, for the necessary means to carry on this work, so important for the welfare of mankind, to national or city governments, or to private laboratories, such as exist at a few of the greatest universities.

A CASE OF HYDROCEPHALUS.

By HAROLD N. MOYER, M.D.,
Chicago.

THERE is nothing in the history of this case that would make it worth reporting, except the enormous size of the head, which is by far the largest that has ever come under my observation. A brief reference to the literature, however, shows that its dimensions have been several times exceeded.

The little patient is five years of age, and the cranial dropsy was first noticed at the age of two months; since that time the disorder has steadily progressed. No cause of the disease could be elicited, labor was normal, and for a few weeks after birth the child seemed to be quite well.

At present there is a striking disproportion between the slender limbs, emaciated body and enormously enlarged head. This disproportion sensibly augments the apparent size of the head. The child is blind; there is constant lateral nystagmus. All of the limbs are spastic, and equino-varus is present in each foot. The enormously distended scalp appears as though

it would burst with slight additional pressure. It is sparsely covered with coarse, ill-nourished hair, and over the surface enlarged, tortuous blue veins can be seen.



The head measures from glabella to occiput 19 inches, biaural circumference 20.5 inches, circumference 30 inches.

Connor, in the *Cyclopedia of Diseases of Children*,

mentions a head in the Warren Museum that was 27.5, and another in Cruikshank Museum of 51 inches. A case is reported by Cardinal with a circumference of 32 inches, and another by Esquirol of 36 inches. In none of these cases is the age given. Connor's own case was that of a child but 28 months old, with a measurement of 42 inches from glabella to occiput, and a biparietal of 27.5 inches. The circumference of the head is not given, but judging from the other measurements it must have considerably exceeded this case.

103 State St.

PEDIATRICS CONSIDERED AS A SPECIALTY.*

By WALTER F. BOGGESE, A.B., M.D.,
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IN selecting a subject for to-night's discussion I could think of nothing of more interest to many of our fellows than a resumé of the study of infancy and childhood considered from the standpoint of a specialty. As you well know, the subject of Pediatrics comprehends the anatomy, physiology, pathology and therapeutics of infancy and childhood; infancy including the period of human life from birth to the end of first dentition, and childhood from dentition to puberty.

Until the last few years our institutions of medical learning have sadly neglected this subject in their curriculum, and it has been owing to this lack of proper instruction that the difficulties of examination and treatment have often been exaggerated.

While it is true that infants cannot express themselves except as the untutored savage by grunts and groans, cries and gestures, which require experience to interpret, tact and skill to develop, and knowledge and science to properly utilize, children are not really little men and little women in whose diminutive bodies diseases manifest themselves by the same tokens that they do in the adult, and those diseased conditions are to be combated by the same remedies save in smaller doses. Infants have special constitutional peculiarities which thus give to the diseases of early life distinctive characteristics. Among these we will enumerate the following:

Excitability of the Nervous System.—The nervous

* Synopsis of a paper read before the Falls City Medical Society.

system is but in a preparatory and embryonic condition. The brain is large and soft, with a large per cent. of water. Gray and white portions differ but little in color and consistency and composition. The brain does not attain its full development until months and even years after birth. At first it is in a plastic state, a state of irritability and instability. In this condition a perversion of function may result from causes which would exert no influence upon the youth or adult. The spinal cord also lacks consistency, the anterior columns are more largely developed than the remainder of the cord, hence more frequently the seat of pathological changes (anterior poliomyelitis). The peripheral nerves do not exhibit all their normal functions until weeks or months after birth. They are very excitable and out of all proportion to the slow development of the inhibitory centers. For the first month after birth the connecting fibers between the undeveloped brain and the pyramidal fibers of the cord perform no function whatever, consequently the movements of the new-born are not controlled by will-power but are subject exclusively to reflex control, this continuing more or less for two years. This period of imperfect brain development is largely controlled and influenced by heredity and morbid psychic inheritance. This excitability of the nervous system is shown by the following manifestations:

1. Convulsions and coma from overfeeding. Skin hot, extreme agitation and convulsions or coma.
2. Brain symptoms, e. g., headache, vertigo, delirium, etc., without intra-cranial trouble.
3. Night-terrors in children from worms, nocturnal delirium.
4. Reflex convulsions of all kinds, having no gravity.
5. Nervous shock in diarrhea and dysentery.
6. Another factor in producing nervous symptoms in children is adenoid growths in the post-pharyngeal space. We are all familiar with this condition so commonly found in children, and realize that adenoid growths produce mouth breathers, catarrhal conditions of the naso-pharyngeal space, and many nervous symptoms.

Effects of Mere Disturbance of Function.—The second distinctive characteristic that we shall note is the effects of mere disturbance of function.

1. Children quickly part with heat and become chilled, hence proneness to catarrhal symptoms.

2. Sudden death from mere disturbance of function. No post-mortem signs.

Diathetic Disturbances.—A child is as its diathesis. The diathesis shapes its features, moulds its form and gives it its intellectual possibilities.

- (a) Syphilis,
- (b) Scrofula,
- (c) Tuberculosis,
- (d) Rickets,
- (e) Rheumatism.

(a) Syphilis is generally the consequence of inherited taint. It thus presents a combination of the so-called secondary and tertiary stages of the disease. Still the progress of the disease is not entirely uninfluenced by the tender age of the patient. Infantile syphilis, like the other diathetic diseases of childhood, may affect the tissues very widely, and in many ways differently from the adult. Our time will not allow us to take up the consideration of infantile syphilis *in extenso*.

(b) The scrofulous diathesis is one of the most common of the morbid type of constitution which we meet in the child. This vice of constitution is often hereditary and handed down with singular persistence from generation to generation. A child who is so unfortunate as to be born with this unhappy diathesis is liable to widespread evidences of constitutional fault with which he is burdened; his skin, his mucous membranes, his bones, joints, organs of special sense, lungs, lymphatic system, are all excessively vulnerable, and may all or any of them become the seat of obstinate disturbances or incurable diseases.

(c) Tuberculosis arises in most cases as a consequence of special hereditary predisposition, and acute tuberculosis frequently assumes a form which is rarely if ever seen in adults. We have evidence of this in tuberculous joints, tuberculous glands, tuberculous meningitis, etc.

(d) Rickets is a diathetic disease of infancy; its association with syphilis is characteristic and not uncommon.

(e) Rheumatism: Here, too, we find distinctive diathetic disturbances. I wish I could take up the many characteristic

differences between rheumatism in the adult and in the infant, e. g., chorea, etc., but time will not permit.

Abrupt interference with the nutritive processes cause sudden death or grave symptoms, e. g., the shock of malnutrition, etc.

Sudden death in childhood differs from the same condition in adults in that it is generally due to laryngismus, syncope, or collapse of lung, or thrombus of the pulmonary artery; the temperature may vary just before death from 96° F. to 107° F. The tendency of acute diseases is to recovery.

Children bear hyperpyrexia well.

Children seldom die of pneumonia.

Local symptoms in diseases of infancy and childhood are not always trustworthy, a peculiar sympathy exists between the various organs, so that the symptoms may be in one place and the disease in another quite remote. Convalescence is usually rapid.

Examinations.—The difficulties of examination are often exaggerated. All necessary information as to beginning of the trouble, when and how taken, may be elicited from the mother by careful questions. Mothers, owing to their love and solicitude, are good observers, the doctor supplying all necessary gaps. The doctor should ingratiate himself with the child and gain its confidence.

1. Do not be abrupt or in a hurry; notice a child casually at first, then strip it and inspect every part. The tint of the face, the color of the lips, the general physiognomy, all help you to properly locate the disease. Blueness of the upper lip in early life is a common sign of labored digestion. Years ago it was pointed out that certain lines or furrows in the face of an ailing child, by their position, indicated the seat of the derangement.

(a) Occulo-zygomatic line denotes diseases of the brain and nerves.

(b) Nasal denotes abdominal mischief, gastro-intestinal trouble.

(c) Labial shows diseases of lung and air passages.

2. Shape of head and limbs, attitude, cry, absence of tears, condition of fontanelle, etc.

3. Pulse, respiration and temperature.

4. Dietary habits.

5. Carefully inspect the ejecta from stomach or bowels.
6. Genital organs.
7. Rectum, etc.

Treatment.—1. Administration of physic is of less importance than dietary regulations.

2. Occupy large and well-ventilated room.
3. All noise and bustle to be prohibited.
4. Should be fed through nasal tube or per rectum when necessary.

5. To reduce temperature.

(a) Tepid sponge bath.

(b) Warm bath, 80° to 85° , in convulsions and great irritability of the nervous system and in Bright's disease, remain ten to twenty minutes.

(c) Hot bath, 95° to 100° in great prostration, cholera infantum, urgent vomiting, remain four to five minutes, a little mustard may be added.

(d) Cold douche followed by vigorous shampooing in weakness, atony, scrofulous-cachexia, etc.

6. Stimulants take a high place among internal medications.

7. Tonics, quinine, iron, mineral and vegetable bitters, cod-liver oil, etc.

8. Opium should be given cautiously.

9. Belladonna can be given in large doses. Children one year of age can take one to twenty drops.

10. Quinine, digitalis and lobelia are well borne.

11. Alkalies form a valuable class of remedies, also astringents.

12. Purgatives may be given, but do not overpurge.



PRACTICAL NOTES.

A New Culture Medium for Growing Diphtheria Bacilli.—A. Loos recommends:

Neutral pepton bouillon.....	1,000 grammes
Agar-agar	20 grammes
Albuminate of soda.....	20 grammes

In order to neutralize, 15 cc. of a normal solution of caustic soda are added. With this sodium-albuminate-agar, petri dishes are filled.

After a long experience with this culture medium, Loos comes to the following conclusions:

1. That streptococci do not grow at all on this culture medium.
2. That diphtheria bacilli grow abundantly; after twelve hours colonies have formed which can be recognized by very weak magnifying glasses; and sometimes even after six to eight hours growths are perceptible under the microscope.
3. That staphylococci grow, but not as abundantly as in ordinary agar.

The American Pediatric Society is making a collective investigation of infantile scurvy as occurring in North America, and earnestly requests the co-operation of physicians, through their sending of reports of cases, whether these have already been published or not. No case will be used in such a way as to interfere with its subsequent publication by the observer. Blanks containing questions to be filled out will be furnished on application to any one of the committee. A final printed report of the investigation will be sent to those furnishing cases. [Signed.]

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EDITORIAL COMMENTS.

Foundling Hospitals in Italy as a Means of Spreading Syphilis.

The foundling hospitals of Italy are once again to the front. The scandals in connection with their management have aroused the government, and a thorough investigation of these institutions is now proceeding all over the country. Strenuous efforts are to be made to abate as far as possible the existing abuses. The minister of the Interior has ordered the various provincial officials to report on the condition of these hospitals in their districts. The reports for two districts have just been published. That from Cumeo is specially interesting owing to the belief that the spread of syphilis in that province is mainly due to the system of out-nursing in vogue there. It is also stated that there is much mismanagement in the reception and nursing of the inmates, and that the mortality rises as high as 59 per cent. But the most serious and most instructive feature of the case is the reported spread of syphilis by the agency of these foundlings. It appears to be customary to keep the infants in the hospitals but a very short time when they are sent into the country to be nursed. They are not detained in the institutions a sufficient length of time to ascertain whether they are syphilitic or not, and in consequence it is conjectured that much of the spread of syphilis in that part of Italy which has taken place within the last few years is due to these children. To such an extent has syphilis increased of late that the matter has given rise to much alarm. So great indeed is the scare that the leaders of the medical profession have called the attention of the Italian Government in order that a searching inquiry into the causes of this increase of venereal disease may be instituted. It is to be hoped that the government will comply with these demands, and order a complete investigation. The results of an inquiry

of this description should go far to solve the problem as to whether syphilis on a wide scale can be spread by means of these tainted infants.

**Fears and Night
Terrors of
Children.** G. Stanley Hall says that the fears of children are generally created by parents and servants. He found that 1701 children had 6456 fears, the leading ones being the fear of lightening and thunder, reptiles, strangers, the dark, death, domestic animals, disease, wild animals, water, ghosts, insects, rats and mice, robbers, high winds, etc. No child was found to be afraid of the devil, a most gratifying tribute to the good effect of improved education. There are other causes to account for these fears beside the injudicious behavior of parents and servants. Over stimulation in education, bringing on brain fatigue is one of these, and neurotic children will suffer from fears for the mere reason that they are neurotic. When we grow up we are too apt to underestimate our childish fears, yet the fact should be considered that at the time they are very real and should be treated with sympathy. The subject of "night terrors" of children has scarcely received the attention that their value as a symptom deserves. In England and in the greater part of Europe the literature on the matter is but scant. In France, Germany, and in this country, although the question of night terrors has been entered into more fully, there still appears to be a great divergence of opinion in regard to the nature and importance of the complaint. Dr. Coutts thinks that night terrors can be classed in two comprehensive groups. In the first group are to be placed the opinions of those who regard the disorder as reflex, the exciting cause being partial asphyxia, the result of abdominal disturbance, naso-pharyngeal trouble, or bad ventilation. In the opinion of others they must be looked upon as a manifestation of inherited neurosis. Both of these methods of reasoning are without doubt correct. Errors in diet and hygiene may be laid down as a cause of many

of these attacks, but as Dr. Coutts remarks, disturbances of this description are of no import and cannot be looked upon as true night terrors. Night terrors seldom occur under the age of two years or above eight years of age. The children of "highly strung" parents are specially prone to such attacks which must be put down to inherited neurosis. While the condition cannot be regarded as dangerous in itself, as a danger signal its importance should not be underrated.

**Genius in
Childhood.**

Genius has been defined in several different ways. It was either Dr Johnson or Carlyle who characterized it as "an infinite capacity for taking pains." Andrew Lang paraphrases this definition and terms it "an unmeasured capacity for doing things without taking pains." At the present time many persons agree with Max Nordau in regarding the possession of genius as betokening the presence of disease, or rather, as a form of neurosis. Indeed, a satisfactory definition of genius is as hard to discover as is the quality itself. A sharp distinction should be made between precocity and genius; in fact, it seldom follows that the child, who when young exhibits phenomenal quickness in learning and picking up information develops into a gifted man or woman. This abnormal acuteness is in very many instances the stamp of neurotic inheritance, and will not last. As Herbert Spencer points out "the abnormally rapid advance of any organ in respect of structure involves premature arrest of its growth. Therefore these tendencies in such children should be repressed rather than stimulated. The apparently dull and stupid child is frequently he who in later years will astonish the world by his brilliancy. This apparent dulness, too, in early youth is often owing to some physical defect as tone deafness, color blindness or myopia. True genius may be said to almost verge on the miraculous; it is a something altogether distinct from cleverness and talent, and implies that the being endowed with it is possessed of a

remarkable intuition that closely approaches inspiration. The genius for calculating is said to be the one most early developed, then probably follows the genius for painting. The genius for poetry is stated to be developed more slowly. But after all no hard and fast rule can be laid down as to the development of any kind of genius. In some the gift is developed when young, while others, and probably the larger number, take considerable time to fully mature their powers. There is one point, however, that may be noticed—that those who develop most quickly with but few exceptions break down or die at an early age. The nervous organization of geniuses is invariably highly strung, consequently, when young they are irritable and peculiar. Napoleon and Byron were morbid, unpleasant children, while Poe, Shelley and Coleridge were esteemed mad by their childish companions, while in the opinion of his teachers Sir Isaac Newton was an idiot.

**Milk Supply of
Large Cities.**

From one cause or another this is an age of feeding bottle and artificial food. It is quite useless in most instances to advise mothers to feed their infants at the breast. They will not. This evasion of the most important duties of motherhood sometimes proceeds from physical incapacity, sometimes from social demands; but whatever the cause, the fact that it is so remains, and the situation has to be faced. The best substitute for mothers' milk must be found, and it is absolutely essential for the health of the infants that the supply of cows' milk should be as pure as possible. In our large cities the danger of contamination of milk is enormous and much of the infantile mortality from diarrhea and other diseases is due to bacterial contamination of milk. There is no system as yet known by which milk in its natural form can be rendered wholly innocuous. Sterilized milk is not a perfect food for children, it has its advantages and disadvantages. Dr. Ernest Hart, the well-known editor of the *British Medical Journal* has just pub-

lished a report on the influence of milk in spreading zymotic diseases, in which he goes over the whole ground of the causation of disease by the agency of milk and recommends many remedial measures. Here in New York city we can congratulate ourselves on being in advance of any town in Great Britain in regard to regulations controlling the sale of milk, and most of the precautions suggested by Dr. Hart to ensure a pure supply are already in force. In this report boiling of milk is referred to as an excellent precautionary measure, but it is pointed out that boiling does not confer absolution on the vender, nor put aside the necessity for having all our dairy farms, cowsheds and milk shops in the best sanitary conditions. In New York city the labors of the Board of Health have effected a wonderful improvement in the quality of the milk supply. The system introduced by them of granting permits to venders of milk has been found to work well. This together with the application of the tuberculin test to milk cows has brought into existence about as perfect a system of milk inspection as is at the present time possible. According to the report of the Board of Health for 1896 the number of cows which furnish milk for the city is 115,570. There are 7000 places where milk is sold both wholesale and retail.

Although it has lately been asserted by a well-known English physician that true syphilis is by no means the formidable disease we have been led to suppose, and that in the great majority of cases it is so easily controlled that we need not fear any of its manifestations, it may be taken for granted that this optimistic view will not meet with general acceptance. This same authority goes on to say that syphilis is no more dangerous nor more difficult to cure than an ordinary cold, and that as to the innocent children of whom we have heard so much it is the rarest of all events for the disease to be transmitted from parent to child. It doubtless is true that syphilis

**Infantile Syphilis
and the Probable
Danger of Nursing
Infected Infants.**

is not so virulent and destructive a disease as in bygone days, when its ravages would not infrequently decimate whole districts—and before intelligent treatment combined with improved methods of hygiene stepped in to stay its course. Still to contend that it is a trifling complaint and not hereditary is saying too much, and against the lessons learned from all past experience. On the contrary, unfortunately, there is no room for doubt but that syphilis is one of the most fearful diseases to which flesh is heir, and that it can be transmitted is a fact just as certain. Opinions, however, are divided as to the length of time the contagion lasts. Some say that there are no authenticated cases on record of syphilis occurring as a result of heredity beyond the first generation, while others hold to the view that it may leave its taint for at least two generations. That many infantile complaints are sometimes erroneously laid at the door of syphilis is likely enough. In many instances when the physician is at fault for a diagnosis he will fall back on syphilis. The question of the transmission of syphilis is a most interesting one. Many specialists on the subject have of late fallen foul of Colles' law and hold that it is impossible for the father to transmit the disease direct without first contaminating the mother; this belief is gaining ground in this country. The Frenchmen, Fournier and Diday, do not support Colles' law, and emphatically say that "If a woman bear a syphilitic infant that she must of necessity have had the complaint herself." In England the truth of Colles' law is still stoutly affirmed. In connection with this the question has within the last two or three years been raised as to whether a mother should suckle her congenitally syphilitic child and has naturally originated much discussion. Nowadays there is a growing tendency to depreciate the danger of contagion of inherited syphilis, and to advance the theory that the contraction of the complaint from an infected infant is an occurrence of a very rare nature. However, on this point there is much divergence of opinion.

Jonathan Hutchinson says that he has met with a fair number of cases of chancre on the nipples of those who not being the actual mothers had suckled syphilitic children; but he had not met with a single case in which a mother had become infected by nursing her syphilitic child, and therefore he thinks from the child's point of view it was a pity to deny to them the additional chance of life that was given them by maternal nursing. Many prominent men assert, on the other hand, that the mother enjoys little or no immunity. It would appear then that the safest plan to follow in the case of a tainted infant is at any rate to prevent a healthy wet nurse from running any risks to herself by suckling it. Certainly it may be injurious to the health of the child to bring it up by hand, but after all the health of a woman should be considered before that of an infant.



ABSTRACTS.

A CASE OF ARSENIC PARALYSIS.

COMBY (*Centralbl. f. Kinderheilkund.*, 1896, i, 318) presented the case of a seven-year-old girl, who had been treated with arsenic for chorea. The initial dose was 10 milligrammes a day, and it was increased 5 milligrammes daily until the highest dose, 35 milligrammes, was taken, and it was then again decreased. During eleven days the child had taken altogether $23\frac{1}{2}$ centigrammes of arsenious acid. On the fifth day of treatment the choreic movements ceased altogether, never again to return. On the sixth day, however, the child was taken with vomiting and slight fever, which symptoms disappeared after 11 to 12 days, so that the child was dismissed in perfect health. Five weeks later it was seen again, presenting complete paraplegia, which had made its appearance 46 days after the cessation of treatment; the general health was perfect, the child had a brilliant appearance, but the lower extremities were totally paralyzed, and the reflexes abolished. In spite of the administration of strychnia, faradization and sulphur baths, the paralysis increased, and soon invaded the trunk and the upper extremities, though only with moderate severity. After a few days incontinence of urine and feces made its appearance and lasted 10 days. Now a marked improvement began, and after one month the child was again able to walk. He believes the affection to have been myelitic on account of the involvement of the bladder and rectum. The case teaches us not to administer such very large doses of arsenic, and to discontinue its use at the first symptom of intolerance (vomiting, etc.)

CEREBRAL SPASTIC PARALYSIS IN CHILDHOOD.

F. GANGHOFER (*Ztschr. f. Heilk.*, 1896, xvii, 303) gave a resumé of the history of 54 cases of cerebral spastic paralysis. In a number of these cases an autopsy was also obtained. He arrived at the following conclusions: It is rare that in the causation of cerebral palsies, the traumatic effect of birth on a previously healthy brain, is to be considered; a very important factor, however, may be the unfavorable development of the brain of the child in utero, determined by illness of the mother during pregnancy (psychoses, neuroses, trauma, tuberculosis, etc.). To hereditary lues must be assigned a prominent role in the etiology of congenital spastic palsies; especially sclerosis of the brain and the spinal cord, which de-

velop early, frequently in uterine life, under the influence of hereditary syphilis. The microscopical examinations of the central nervous system in cases of infantile cerebral paralysis, which date from foetal life or from the early time of extra-uterine life, teach that these cerebral lesions (particularly those of the cortex) result in defective development of the pyramidal tract (usually only partial), which are anatomically distinguished by the lessening of the number of fibers or, perhaps, by an abnormal narrowness of the fibers. The spastic paralysis rests on the disturbance of the transmission in the cortico-spinal neuron. Cases are met with presenting the symptom complex of spastic cerebral paralysis, in which a poverty of the fibers of the pyramidal tract in the spinal column is found, but in which the cerebrum, and especially the cortex, in microscopical examinations, is seemingly normal. In view of the undoubted dependence of the pyramidal fibers upon their trophic centers, the pyramidal cells of the cortex, a disease (perhaps only functional) of the latter is to be assumed. The statement of different authors that spastic cerebral paralysis of intra-uterine origin frequently becomes manifest only towards the end of the first years of life, was confirmed by his observations. In a number of cases of cerebral infantile paralysis, examination demonstrated sclerosis of the brain and the spinal column.

The sclerosis of the brain is frequently circumscribed, and the ventricles are more or less dilated, and their ependyma thickened and granulated. For the origin of these scleroses, it is not unlikely that syphilis and acute infectious diseases (also those of the mother) may frequently be responsible. The poverty of fibers of the pyramidal tracts due to defective development might lead to sclerosis. Cases of pure spastic paraplegia, as understood by Erb, without involvement of the upper extremities and the functions of the brain, with perfectly normal speech and intelligence, and without strabismus, are comparatively rare. The possibility that they may be based on a primary disease of the pyramidal tracts, i. e., the lateral columns of the lower half of the spinal cord, may be conceded, but has not as yet been demonstrated by autopsies. Very likely a defective transmission by the tropic cells of the brain should also be made responsible for these cases.

THE TREATMENT OF INFLAMMATORY DISEASES OF THE EYE BY ELECTRICITY.

V. REUSS, (*Wiener Klin. Wochenschr.*, 1896, ix, 393) in 1894, wrote on the treatment of scleritis by the galvanic current, and recently he published in detail further experiences. He makes use of both the galvanic and faradic currents, the first usually in scleritis and in related forms of disease. By

means of a small electrode, consisting of a small platinum-disk, the current (1 to 1.5 milliamperes) is applied directly to the sclerosed part, while the other pole is applied to the cheek, the forehead, or to any other part of the body. The duration of each sitting, which is usually given every other day, is 1 to 1½ minutes. Following this application a temporary suffusion is soon observed, and after a few sittings improvement can be noticed; after 12 sittings a cure is usually obtained. Failures are infrequent. The galvanization exerts at the same time a very favorable influence on the pains of scleritis, which, as a rule, are rapidly dissipated. In one case, in which the galvanic current was not well borne, on account of the pain it occasioned, the faradic current was employed. The favorable result obtained induced him to employ it also in other forms of inflammation of the eyes. This was always attempted in the form of the "electrical hand." The patient and the physician each took an electrode in one hand and the latter then laid his fingers on the closed eyelids of the former. The current must not be allowed to cause any unpleasant sensations. The duration of the sitting should be 1 to 5 minutes. In iritis and iridocyclitis surprising results were frequently obtained. In regard to the pains the application acted especially well. The cause of the disease was apparently modified by the applications in some cases. However, the author is guarded in his claims. Wonderful results were obtained in the periodically recurring injection of the ball of the eye, called by V. Graefe, subconjunctivitis, which has been lately described by Fuchs as episcleritis partialis fugax. This is, however, believed by the author to be a vasomotor disturbance. In one case, which resisted all treatment, a rapid and seemingly permanent cure was effected by electricity.

THYREOID SECRETION IN RHACHITIS.

HEUBNER (*Berlin, Klin. Wochenschr.*, 1896, xxxiii, 700) undoubtedly had poor and unsatisfactory results with the phosphorus treatment of rhachitis in severe hospital cases, but in the treatment of outdoor cases his results were much more favorable. He declares himself to be more in accord with Pommer's views than with those of Kassowitz, in regard to his conception of the disease, and he repudiates the "inflammatory theory of the latter, finding the only diseased condition in rhachitic bones to be an absence of calcification." The so-called inflammatory symptoms are secondary signs of pressure-results, muscle tension and of trauma. He also speaks guardedly on the causes of this peculiar defect of calcification in the growing bone, but the hypothesis seems plausible to him that we may have to deal with no moderate chronic overcharging of the blood with carbonic acid gas, which prevents the precipitation of lime salts.

Starting from this hypothesis, he proposed the therapeutic experiment of rendering the blood of rhachitic subjects alkaline—say, by spermin. This was, however, not carried out; but the first experiment was made with thyreoidin, having in view the relation of the thyreoid gland to bone growth. The results obtained from the treatment by thyreoidin in rhachitic subjects, up to this time, give the impression that the nutrition was very favorably influenced thereby, although he confesses that he is unable to explain this peculiar action in rhachitic subjects, which is not as a rule attributed to thyreoidin. He simply says that the drug has raised the power of resistance in the organism; a markedly rapid improvement in the disease of the bone has not, however, been obtained. The results, therefore, were not encouraging.

Senator explained that he had not yet reached an opinion on the action of phosphorus, but had found it distinctly active in spasm of the glottis. Senator was not able to quite understand the difference between the anatomical conception of Pommer, and the old one by Virchow, which relate to the bone-changes in rhachitis, and still holds that inflammatory irritation and the increase of carbonic acid in the bone depending on it hinders the absorption of lime from the blood. Lewin also advocates the administration of phosphorus, if it be carefully used, and he believes with Senator that the phosphorus does not here act as a nervine. Schaper, during the discussion, threw out the hint that the progressive calcification of the bone might be observed by means of the Roentgen rays.

A CASE OF SCARLET FEVER WITH HYPERPYREXIA.

M. DEPASSE (*Revue Mensuelle des Maladies de l'Enfance*, 1896, xiv, 294) observed a hyperpyrexia of 42° C. in a child sixteen months old, during an attack of scarlet fever, which lasted fully three days. In spite of active hydrotherapeutic treatment and the exhibition of antipyrin and quinine the temperature constantly remained at this dangerous height, and only after seventy hours did it gradually become lower, and the patient made a good recovery.

SLOW PULSE WITH INEQUALITY OF THE PUPILS FOLLOWING AN ATTACK OF SCARLET FEVER.

E. APERT (*Revue Mensuelle des Maladies de l'Enfance*, 1896, xiv, 376). A nervous boy, eleven years of age, with no hereditary taint, began to develop strange disturbances of the circulatory system at the end of a typical attack of scarlet fever, in so far that with a temperature of 38° C. only forty-four irregular pulse-beats were observed, and occasionally great arrhythmia of the heart, three to four pulse-beats at great intervals, then again two to three rapidly following beats. At

the same time there was present great inequality in the pupils, the left pupil being three times the size of the right, both reacting well to light and accommodation. Sensitiveness and reflex action were present. In the absence of every other explanation, the author declares this condition to be due simply to some nerve disturbance. One month after dismissal the same symptoms were still present.

TWO DEATHS FROM VARICELLA.

LÖHR (*Deutsche Med. Wochenschr.*, 1896, *xxii*, 391) gave the history of two cases, in which both children were taken with varicella and died in a couple of days. In one case the autopsy showed that death was not caused by the varicella, but was due to a miliary tuberculosis. In the second case no satisfactory explanation was found, and the probability is that a concomitant septic infection had resulted from a sister who was ill with erysipelas. Cases like these are of peculiar importance aside from their diagnostic interest, as the author points out, because of the inclination of the anti-vaccinationists to deny the truthfulness of the smallpox statistics by including cases of varicella with those of variola.

NEPHRITIS AND ERYSIPELAS FOLLOWING SCARLATINA.

QUEIROLO (*Centralbl. f. Innere Medicin*, 1896, *xlvi*, 1230) in presenting a case of nephritis following scarlet fever, draws attention to the difficulty of making a diagnosis of nephritis when albumin is absent in the urine. Not only edema but uremia and death may occur without the urine having shown a trace of albumin. In the present case the quantity of urine voided was abundant, the specific gravity and the amount of urates sufficient, while the symptoms of uremia increased. One peculiarity, which is also mentioned in Bouchard's work on autointoxications, was present in this case, namely, that during the night the uremic symptoms were most severe, because, according to Bouchard, the kidneys cannot eliminate the toxic material from the blood at night as well as during the day. On this supposition Bouchard based his therapeutic measures to let patients with heart disease, who are subject to attacks of asthma during the night, drink milk at night instead of the daytime to prevent the accumulation of toxic matter in the circulation in the early part of the night. Toxalbumins of erysipelas were said to have in the present case caused death. The diseased kidneys were unable to excrete them, the less so as no hypertrophy of the left ventricle was present. The author looks upon this hypertrophy of the left ventricle as nature's method for the more rapid elimination of the toxins.

A CASE OF RECURRENT SMALLPOX, OR VARICELLA AND VARIOLA.

E. STADELMANN (*Deutsche Med. Wochenschr.*, 1896, xxii, 180) reports the case of a girl, twelve years of age, who was taken ill with a red papular eruption over the whole body, accompanied by febrile symptoms; soon vesicles and pustules were developed. The diagnosis was varioloid, and the child was put with others having this malady. Five days after the cessation of febrile symptoms, the child was again taken ill with high fever; three days following another papular exanthem developed. Typical smallpox pustules made their appearance, and the child died in collapse on the tenth day.

As regards the question of the nature of the first disease, the author, in view of the long-continued fever, the typical pustular eruption, and the gravity of the general condition, holds to the diagnosis of varioloid, although he admits that we have no positive differential diagnostic sign to distinguish it from varicella. If this be true, we have here to deal with a genuine case of relapsing smallpox, a very rare thing. This is of still more interest for the reason that the relapse was much more severe than the primary illness. We must therefore admit an increase of virulence in the micro-organisms of variola in the human body, which is difficult to reconcile with the experiences gained, as to the decrease of susceptibility of the human body, by the inoculation of small quantities of weakened smallpox virus.

NOTES ON TWO CASES OF INFECTIOUS AND TOXIC PURPURA IN CHILDREN.

CLAUDE (*Gaz. Hebdom. de Méd. et de Chir.* 1896, xliii, 194) says that under the term purpura a number of very different diseased conditions are classed, which have only one symptom in common: the eruption of hemorrhages under the skin. And even these do not possess a specific character, which would justify a sharp distinction from other diseases. The nature of the eruption and of its appearance is very different in individual cases. The author distinguishes four types: the dyscrasic, the neuropathic, the toxic and the infectious. He reports one case of the infectious, and one of the toxic forms. In the infectious case, hemorrhagic and necrotic nodules were formed; in the toxic, more or less confluent spots. These two forms represent the highest degree of purpura, in which the hemorrhages form the main symptom, if not the only one, while the other forms are hardly worthy the name. The infectious nature of the disease is not always easy to prove. Purpura may accompany any infectious disease (endocarditis, pneumonia, phlegmon), or it may be the expression of an infectious condition, difficult to define, the point of

entrance and localization of which is unknown. In both cases circumscribed foci of infection may exist, no matter whether a general septicemia or a toxemia without any septicemia, is added. This is the explanation of how some authors were able to prove the presence of microbes in the blood, and others not. Purpura itself is on the whole not confined to the activity of certain specific micro-organisms. Different kinds of microbes may occasion it. The hemorrhagic symptoms are due to the direct action of the toxins on the blood or on the nerve centers. Certain cases, which accompany some infections, belong to the class of toxic purpura. In these cases mineral or organic poisons may be the active principle: alkaloids, ptomaines, leucomaines, toxin. The presence of pathogenic micro-organisms in the hemorrhages distinguish the two forms, which may be important as regards the prognosis. The infectious form is to be looked upon as much more serious than the latter, in which a sharper boundary of the disease process, and an easier elimination of the pathogenic substances may be hoped for.

PERMANGANATE OF POTASH AS AN ANTIDOTE IN ACUTE OPIUM POISONING.

VUCETIC (*Wien. Klin. Wochenschr.*, 1896, ix, 729) says that opium poisoning is especially apt to happen in children as their organism seems peculiarly susceptible to the effects of this poison. Filatow rightly counsels against the exhibition of opium in weakly, anemic children, and such as suffer with broncho-pneumonia and cholera infantum. Baginsky thinks that it should be avoided in the treatment of children, and Comby advocates its use only with considerable care. Barker Smith was the first one who introduced permanganate of potash, in 1877, as an antidote to opium. The results, however, probably from errors in the administration, were not such as to bring it into general use. Dr. Moor, in 1894, again brought this chemical forward as a very reliable antidote, in proof of which he himself swallowed three grains of morphine, following at once by four grains of permanganate of potash dissolved in water. Not the slightest action of the opium had appeared in five hours nor did it appear subsequently. Shortly afterwards Moor was able to report seventy-one cases of acute opium poisoning saved by the administration of this remedy. Amongst these was the case of a young man, nineteen years of age, who had swallowed forty-three grains of opium. In a few hours grave symptoms had developed, which did not yield to atropine. After three hours permanganate of potash, ten drops of a solution, 0.4 to 30.0, was injected subcutaneously. This was repeated within a quarter of an hour. Improvement rapidly followed, and in six hours perfect recovery had taken place. Carpenter reports the case of an infant, eleven months old, suffering from opium poison-

ing, in which, after failure of all other methods, the hypodermic injection of a concentrated solution of permanganate of potash saved the child. Last year the author had the opportunity to observe a case of accidental poisoning with opium in a child, and gives the following history: D. P., two and one-half years old, found a bottle containing 15.0 grammes of tincture of opium, which had been prescribed for afterpains and which were to be given in black coffee; the child, imitating the mother, poured about one-third of this quantity into a dish containing black coffee and swallowed about one-half of it, containing probably 1 to 2.0 grammes of the tincture. Soon after, the mother, having observed this, took away the saucer and administered a wineglassful of milk; in about a quarter of an hour the mother observed that the child was getting sleepy and pale. Vucetic arrived half an hour later, and was struck by the appearance of somnolence, slowed respiration, the pinched, pale, somewhat cyanotic face with closed eyes, which suggested tubercular meningitis. In this he was seemingly supported, by the answer to a question, that the child had been ill a long time. On more minute examination, the eyes were found to be dull but not fixed. There were no deviations; both pupils were equal and very small. The bowels were said to be normal, no headache nor vomiting were present. The pulse was sixty beats to the minute, therefore very slow for a child two and one-half years of age. Occasionally the pulse became irregular and intermittent. Respiration was fifteen to twenty to the minute, and arrhythmic. On being strongly pinched, the patient raised his eyelids. This whole jumble of symptoms did not seem to belong to tubercular meningitis, and only after diligent questioning, the mother confessed that the child had swallowed the coffee containing the drops. By titillation of the pharynx vomiting was readily produced and some milk brought up. On being loudly called, shaken by the hands and pinched, the child would sometimes open its eyes. He administered about 0.01 gramme of a one-per-cent. solution of permanganate of potash solution, hypodermatically, into the skin of the right hypochondrium. Besides this, a teaspoonful was also given the child by the mouth. In half an hour another dose was administered, and a few minutes later the child opened its eyes but still laid prostrated. Orders were given to repeat the medicine every hour. Two and a half hours later, the child was quietly sleeping. The respiration had risen to thirty, the pulse to seventy beats in the minute and was regular. The medicine was now given less frequently, namely, every two hours. Next day the child was playing around, being only a trifle pale. The medicine was continued every two hours during this day also, and the patient remained well. At the site

of the injection some little swelling and discoloration remained for a few days.

The question as to the manner in which this excellent action of the permanganate in poisoning by opium is brought about must be answered by the test tube. It is a fact that a solution of 0.05 grammes of morphine hydrochlorate in 25.0 grammes of water and mixed with a permanganate of potash solution of like strength will not yield a mixture of the purple color of the permanganate solution, but within five minutes a dark sediment will be formed, covered by a colorless and tasteless liquid. A quantity of this fluid, tested with liquor ferri sesquichloride, will not give the usual blue color of the morphine reaction. Also a portion of the sediment, dissolved in concentrated sulphuric acid, to which is added one or two drops of nitric acid, will not give a blood-red color. From this it can be seen that no trace of morphine is present, either in the sediment or in the supernatant liquid, at least the usual reactions did not show it.

TUBERCULOUS CERVICAL GLANDS IN CHILDREN.

H. LASER (*Deutsche Med. Wochenschr.*, 1896, xxii, 500) says that some time ago Volland published a work, in which he tried to prove that the spreading of tuberculosis of the lungs by way of inhalation was very rare, but that in nearly every case an infection of the cervical glands had existed in early youth, and the tubercle bacilli gained entrance to the apex of the lung from these. The infection was said to come from the ground with which all children frequently come in contact, and in this manner the infectious matter adhered to the skin of the face or the mucous membranes of the mouth and nose, and from here found its way to the lymphatic glands. He therefore proposed the following prophylactic measures:

1. The mucous secretions from the mouth and nose should be continually removed to prevent abrasions.

2. The child should not touch the floor at any time with its hands. In learning to walk it must never crawl about the floor, but should always be led or use a proper walking apparatus.

Volland found in 2506 persons, varying in age from 7 to 24 years, swollen cervical glands:

From	7	to	9	years in	96.6%
"	10	"	12	"	" 91.6%
"	12	"	15	"	" 84.0%
"	16	"	18	"	" 69.7%
"	19	"	24	"	" 68.3%

The percentage was about the same in both sexes. From this, Volland drew the following conclusions:

1. That the presence of swollen cervical glands among children is extraordinarily frequent.

2. That the infection with scrofulous begins before going to school.

3. That not all scrofulous swollen cervical glands are due to infection with tuberculosis..

A great number are the result of pharyngeal inflammation, catarrhs, diphtheritic affections, skin eruptions, etc., and in the course of time they totally disappear. Those swellings of the cervical glands, which do not disappear, must, however, be looked upon with suspicion as tuberculous. As a proof of this view Volland refers to the fact, that he found in 101 (93 %) out of 108 cases of consumption, more or less firm lymphatic glands situated in the neighborhood of the lower jaw.

Laser therefore thoroughly searched the literature of the subject to discover whether the danger of infection from tubercle bacilli from the floor was really so great. The statements are frequently contradictory; in general, however, they fully confirm Volland's views. Laser came to the following conclusions from systematic examinations made on numerous school children:

1. More girls than boys contract measles, scarlet fever, diphtheria, tonsillitis, and scrophulosis.

2. Boys, on the contrary, more frequently suffer with enlarged cervical glands than girls.

3. A diminution with increase in age of the number of children affected with enlarged cervical glands cannot be demonstrated.

4. The frequency of the presence of enlarged cervical glands stands in no relation to the frequency of the occurrence of tuberculosis.

5. In the greater number of cases the enlargement of the glands cannot be connected with tuberculosis, but rather with other etiological factors.

6. We may at any rate assume positively that tuberculosis, as a general rule, is not communicated by hereditary transmission of the disease germ, but in most cases by an infection post partum.

7. For this reason we should strive to protect the children from inhaling finely divided tuberculous dust particles, and also from direct infection by means of the hands, which have become dirty by contact with the floor.

THE TREATMENT OF MALARIA IN CHILDHOOD.

A. FEUCHTWANGER (*Therapeut. Monatshefte*, 1896, No. 8, 439), during five years' practice in Palestine, observed a great many cases of malaria, and endeavored to discover a substitute for quinine; nevertheless, he was compelled again and

again to return to quinine, as the latter gave, after all, the most reliable results.

To children he principally administered quinine bisulphate, which is better borne by the stomach than the simple sulphate, and is therefore of greater utility, although containing less quinine. In very young children (8 days to 2 months old) he frequently ordered an ointment of quinine:

R Quinie sulph..... 2.0;
Adeps suill..... 40.0.

M Ft. ungt. Sig.—To be rubbed into the axillary and inguinal regions, three or four times a day.

In cases where the bisulphate of quinine was not well borne internally, suppositories were resorted to, containing double the dose, i. e., a child five months of age was ordered a suppository containing 0.1 quinine sulphate or muriate five times a day. In rare cases in which these suppositories caused tenesmus, he administered the quinine in rectal injections, rubbed up, in the same dose as in suppositories, with the yolk of an egg. In neuralgia of malarial origin, in older children, valerianate of quinine was used by preference. In two cases of pernicious malaria he had recourse to hypodermic injections of muriate of quinine. The children were in a comatose condition, with tardy pupillary reaction, severe vomiting, extensive enlargement of the spleen and liver, marked icterus, and severe hemoglobinuria. After three injections of muriate of quinine in a little diluted muriatic acid (the ages of the children were 10 to 12 years) the hemoglobinuria vanished as though by magic, the vomiting was controlled by ice pellets and mustard plasters to the region of the stomach; lukewarm baths with cold affusion to the head, followed by an ice-bag, were ordered for the comatose state. To avoid a relapse he followed up the treatment for a number of days by smaller doses of quinine, and for a long time afterwards decoctions of calisaya bark were continued. In spite of this, relapses are not rare, and a malarial cachexia is developed, which sometimes leads to grave conditions. In these cases he sometimes obtained good results by a systematic arsenic treatment.

CYANOSIS.

LITTEN (*Centralbl. für Innere Medicin*, 1896, *xlvi*, 1238), in a meeting of the Berlin Medical Society, held November 2, 1896, presented a child seven years old who was affected with an intense cyanosis of the skin and the mucous membranes. Two sets of symptoms were observed accompanying this condition: an enlargement of the liver and spleen, and albuminuria, probably due to engorgement; and insomnia, apathy, chilly sensations and copious excretion of urates, which probably were due to a retardation of metabolism. This cyanotic

condition is always due to the presence of venous blood in the arterial circulation, and is usually anatomically caused by some abnormal communication of the right with the left side of the heart, an incomplete closure of the foramen ovale. But even in this condition the venous blood will find its way into the left heart-cavity only when there is an excess of pressure on the right side, due to a congenital abnormality, generally a pulmonary stenosis. In the case reported such an abnormality could not be demonstrated. Litten was of the opinion that it required a very rare anatomical change to explain the symptoms of this case, namely, a transposition of the two great arterial vessels, the aorta arising from the right and the pulmonary artery from the left side of the heart. Thus the pulmonary circulation and the systemic circulation must represent two distinct systems in which an arterialization of the blood is impossible. However, life could not be sustained without some communication between the two systems. This is obtained through the lungs, which receive arterial blood from the bronchial arteries and venous from the pulmonary arteries.

In the case under consideration the reverse condition is present: the bronchial arteries carry venous, and the pulmonary arteries carry arterial blood; there may therefore be present, although in a limited amount, an exhalation of carbon dioxide within the lungs. Cases of this anomaly, which fully explain both the symptoms of congestion and the disturbance in metabolism, have been recorded in literature only twenty-four times, and only once diagnosed in life, by Rauchfuss.

ON DISEASES OF THE SPINAL CORD IN WHOOPING-COUGH.

BERNHARDT (*Centralbl. für Innere Medizin*, 1896, *xlvi*, 1238) said that among the relatively frequent sequelæ of whooping-cough certain cerebral disturbances stand at the head, such as hemiplegia of mental diseases and affections of the sensory and cerebral nerves. Rarely, however, do we meet with spinal cord affections; only two such cases have been observed by Moebius, one an ascending paralysis of Landry, and the other an acute poliomyelitis. The author therefore reports the following case: A five-year-old child, suffering with whooping-cough, was attacked suddenly, during a cough paroxysm, without fever or sensory disturbances, by a paræplesia of the legs. An examination four weeks later disclosed a spastic paræplesia of the legs, increased tendon reflexes, slight sensory disturbances in the paralyzed limbs, and some bladder trouble. The paralysis gradually disappeared under treatment, but the cure was delayed by an attack of double parotitis. At present time the child is perfectly well, except a slight weakness of the right leg. As regards the diagnosis, Bernhardt thinks that we have to deal with an

affection of the spinal column, in or about the cord, and most likely with an hematorachis. A hematomyelia may be excluded from the absence of grave bladder and rectal symptoms, defects of sensory functions, and loss of tendon reflex. Hemorrhages under the skin, and mucous membranes are common occurrences in whooping-cough; but a hemorrhage in the spinal column from paroxysms of coughing is a less probable cause than toxic lesions of the vessels, which is frequently observed in infectious diseases. This case was similar to one observed by Turmet, in which there was a paresis of the legs in a little girl suffering from gastric fever. This began to improve, when it grew worse through an inter-current attack of whooping-cough. Finally, the author laid stress on the difficulties of diagnosis in children, and mentioned a case of Henoch, which presented typical symptoms of meningitis, although at the autopsy not the slightest sign of a cerebral affection could be discovered.

STUDY OF THE SPLEEN IN TUBERCULOUS INFANTS.

MANICATIDE (*Revue mens. des malad. de l'enfance*, 1896, *xiv*, 88) examined the spleen of twelve children from two to twelve years of age, soon after death, and found tuberculous changes in ten; in eight these were even macroscopically visible, and in two only microscopically. This condition of the spleen was found to be altogether independent of the extent of the constitutional disease; even in cases in which tuberculosis was not very extensive, a primary enlargement of the spleen was found with a characteristic inequality of the individual granulations, which presented irregular forms, a deeper yellowish tinge, and also occasionally an opaque appearance from cheesy degeneration. In rapid extension of the tuberculosis, the gray, enlarged granulations preponderate, and the organ is hyperemic; in a somewhat slower progress, cheesy nodules are found in the more sclerosed organ. The tubercles themselves contain large numbers of giant-cells and only sparingly bacilli, which generally are found in the neighborhood of a small artery. The transition of an endothelial growth into a tubercle cannot be demonstrated. The Malpighian bodies, the pulp, the interstitial tissue, even the capsule of the spleen may be affected. On account of the hyperplasia of the lymphoid tissue, through the influence of the tubercular toxines, an increase of Malpighian bodies are met with.

FLOATING KIDNEY.

GIORDANO (*Centralblatt für Innere Medicin*, 1896, *xvii*, 647) cured a case of floating kidney in a girl ten years of age, at the Civil hospital in Venice, by fixation of the organ. The patient had noticed for over three years a hard tumor in the

abdomen, accompanied by fever, epistaxis, hemorrhages from the gums, tenderness of the abdomen and intense pain on running and jumping. This was so severe that she frequently dropped to the floor like one dead. Her complexion was waxy, and her abdomen, particularly in the region above the umbilicus, was enlarged. The lower blunt pole of the spleen was two finger breadths above Poupart's ligament, the middle somewhat sharper edge one finger breadth from the umbilicus. The tumor was movable, and could be pushed upward towards the diaphragm. The patient had already been treated seven times in the hospital with quinine, iron and arsenic, without benefit. Laparotomy and fixation of the enlarged spleen to the peritoneum and aponeurosis resulted in a cure and the disappearance of all symptoms. The child looked bright, and was able to run and jump without any difficulty.

THE TEMPERATURE IN WHOOPING-COUGH.

GUÉRIN (*Centralbl. für Innere Medicin*, 1896, xvii, 1214). Whooping-cough runs its course perfectly free from any elevation of temperature only in the very mildest cases; both in the catarrhal and convulsive stage, a more or less active but irregular remittent fever is observed; severe complications, especially broncho-pneumonia, are apt to occasion a pretty high and continuous temperature. Aside from these febrile attacks, which are, however, easily explained, there are sudden, seemingly altogether groundless, elevations of temperature, from 39° C. to 40°, and even to 41°, which cannot be explained.

The author wishes particularly to direct the attention to these cases, as this rise of temperature might be mistaken for some severe complication. It is therefore safer not to give hastily an unfavorable prognosis in the absence of other objective symptoms.

EPIDEMIC DISEASES.

A. GOTTSTEIN (*Berlin. Klin. Wochenschr.*, 1896, xxxiii, 345) attempted to prove that not the cause of the disease, but the susceptibility of the species, decides the form in which a contagious disease is spread. For the study of such epidemics the author has graphically grouped together the mortality of a number of European capitals.

Measles presented a characteristic and for all cities an equal curve. At intervals of three to five years the epidemic flares up, and is then extinguished or continues to run a mild course. The combined rise and fall does not embrace more than one to two quarters of the year, and nearly always falls on the second quarter of the calendar, in many cities even on the same quarter of the year.

The mortality curve of scarlet fever shows cycles of ten to fifteen years, the individual heights of the epidemic wave being two to three years, during which the high mortality continues. Epidemics in large cities, as a rule, decrease together.

Diphtheria becomes epidemic only every quarter of a century, the mortality gradually rising and again gradually falling; at the present time we are living in the decreasing period.

The connection of these phenomena is as follows: Statistic collections in Berlin show that of the population subject to these diseases only a certain number are affected, and of these 95 % contract measles, 40 % scarlet fever and 10 % diphtheria. These different proportions of predisposed persons make the law of epidemics, because, through the general susceptibility for measles those who are susceptible will have had them early, and therefor the mortality curve will quickly rise. In a short time it again declines on account of the absence of material, and will remain down until, after a few years, another generation again offers a large amount of material for new cases.

ADDITION TO THE PATHOLOGY OF INFANTILE DIARRHEA.

BAGINSKY (*Munch. Med. Wochenschr.*, 1896, *xliii*, 1265) says that latterly we have been searching for specific causes for the diarrheas of children, while formerly the anatomical changes were sought after. With a view to the latter he divides the diarrheas of children into three groups:

(1) Purely functional disturbances, i. e., acute dyspepsia with chemical changes.

(2) Catarrhal diseases, from which we must clinically separate

(3) The follicular diseases.

Transitions do, of course, occur. In regard to the question of how these diseases arise, it may be remarked that very early in modern research it was supposed that we had to deal with a toxic effect. The endeavor to find the producers of the poison made seasonable the classic work of Echerrich, who recognized in the bacterium coli and the bacillus lactis the main causes of the disease. To demonstrate the extraordinary resemblance of these bacteria the author showed cultures of both. The similarity is so great that the question has arisen whether they were not one and the same. In about fifty cases which he had examined recently it was shown that the bacillus lactis was able to produce very unpleasant symptoms, and that occasionally it acquires very great virulence. This increase in virulence is also found in the bacterium coli; and he discovered that in private hospitals, where circumstances are different from those in private practice, the pyocyanus may take on unpleasant qualities and be able to cause diarrhea.

This should, however, be distinguished from the typical diarrhea. Similar qualities may also, under certain circumstances, be attributed to the proteus. We know that the bacillus coli and lactis do not generate poisons, but that these are present in the bodies of the bacteria and become free on their death. This peculiarity is also possessed by the proteus and pyocyaneus.

The school of Prague has a different conception of diarrhea; it looks upon it as the expression of a sepsis, therefore as a symptom of a general infection. The author was, however, never able to demonstrate in these cases the well-known bacteria in the blood, and hence the theory of sepsis seems disposed of. It is of decisive importance that the intestinal tract in the cases mentioned shows such grave changes that we are compelled to look here for the primary focus of the disease. As secondary diseases the children would then suffer from affections of the lungs and kidneys.

SUBCUTANEOUS INJECTIONS OF SALT WATER IN GASTRO-ENTERITIS.

C. PICOT (*Centralbl. f. Innere Medicin*, 1896, xvii, 1047). Hypodermo-clysis, i. e., the subcutaneous injection of a greater or less quantity of salt-water, has for the last ten years played a prominent rôle as a substitute in the therapy of cholera for the enormous loss of fluid of the organism. In the profuse diarrhea of children, Demiéville, in 1892, obtained perfect cures by injecting 120 to 150 ccm. of a 0.6 per cent. solution of common salt; nevertheless, this treatment has not been followed up. In a seemingly hopeless case, that of a boy two and a half months old, suffering from uncontrollable gastro-enteritis, the author adopted this treatment, and the life of the child was saved. Lavage of the stomach and of the intestines, the exhibition of egg-albumen water, and decoction of ipecacuanha were administered without relief; the diarrhea and continuous vomiting were not checked; great emaciation and collapse, with nearly total absence of pulse, were present. An injection of 20.0 grammes of a 0.6 per cent. solution of common salt was made in the lumbar region, and soon after was followed by one of 10.0 grammes in the thigh. On the next day notable improvement was observed in the general condition, and the pulse could again be recognized; the diarrhea continued, but was less watery; vomiting was lessened. The mouth was affected with sprue. After eight days the former condition again returned, the pulse was hardly perceptible, and great debility supervened. Two more injections of the salt solution of 20 and 15 grammes each were made. In a few hours the pulse again returned at the wrist, the discharges became less frequent, and the general condition improved. A few days later the diarrhea and the sprue had disappeared altogether, and the child recovered.

BACTERIOLOGY OF THE ANGINAS.

G. H. LEMOINE (*Gaz. de Hopitaux*, 1896, *lxix*, 849).—The rôle played by Loeffler bacillus in diphtheritic anginas is undoubted. Usually, however, a great variety of other microbes are found in the diphtheritic membrane, staphylococci, streptococci and bacilli. These very frequently form a mass in the superficial portion of the exudate, under which the specific bacilli have their seat in characteristic groups. They may permeate the membrane in its whole thickness, pass into the mucosa and produce necrotic processes; they may, on the other hand, appear in the capillaries, in the lymphatic glands and channels, and gain entrance to the general circulation, causing a systemic infection. It has further been demonstrated that certain microbes undoubtedly retard the development of the bacilli of diphtheria. "The presence of colonies of staphylococci is prognostically a favorable sign. The more numerous these are in comparison with the diphtheria colonies, the greater are the chances of recovery." The streptococcus is worthy of the greatest interest. The influence of this pathogenic microbe on diphtheria is, however, in spite of extensive research, as yet still wrapped in darkness. Its constant association with diphtheritic membrane is inconsistent with the usual expression: Association streptococci, as a synonym of malignant diphtheria; particularly as streptococci are found in the saliva of both the healthy and the sick. The discovery of different varieties would clear up this contradictory point. Up to the present time, however, we have not succeeded in differentiating the different varieties, according to shape, color and cultures. It may also be necessary to assume different grades of virulence of the streptococci. Amongst the micro-organisms, whose presence in the acute non-diphtheritic anginas have been demonstrated, the streptococcus also takes the first place. It is nearly always found in the exudate of every angina. Therefore, it is probable that it plays a rôle by its presence in the pathogeny of the anginas. Those cases in which the streptococcus is found isolated and pure, may be named streptococci anginas. No especial symptomatic effects, which are only the attributes of this one variety, seem to be attributable in the human organism to any one variety of microbe, no matter which one may be the cause of the angina. Loeffler's bacillus was found in simple herpetic and pseudo membranous anginas; the streptococcus may be the cause of a simple, a purulent or a pseudo membranous one. From a bacteriological point of view, therefore, a classification of the different forms of anginas, is not at present feasible.

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ORIGINAL ARTICLES.

TWO CASES OF CONGENITAL ELEPHANTIASIS.

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DURING the past ten years of special study of elephantiasis I have been able to collect only ten cases developed during fetal life.*

On account of the great interest of this subject and the small number of such cases that have been observed, I am induced to report two new ones which recently came under my observation and which are well worth describing.

The first case is a white girl, three years old and born at Rio. She came to my clinic April 6, 1897. The maternal grandmother, a Portuguese, before the birth of her daughter, had several attacks of lymphangitis, affecting the legs. This was followed by an elephantiasis of both lower extremities. The mother of our patient was born in Portugal, and when nine years old came to Rio with her parents. She married a Spaniard, who had lived in Brazil for about fifteen years. He

* Moncorvo—De l'éléphantiasis des Arabes chez les enfants. Paris, 1886.

Moncorvo—Dell'elefantiasi degli Arabi nei bambini. Napoli, 1888.

Moncorvo—Sur l'éléphantiasis congénital. Ann. de dermat. et de syph. Paris, 3e sér., t. IV, 1893.

Moncorvo—Leçon orale du cours de pédiatrie. Rio de Janeiro, 1893.

Moncorvo—Sur un nouveau cas d'éléphantiasis congénital. Ann. de dermat. et de syph. Paris, 3e sér., t. V, 1894.

Moncorvo—Sopra un nuovo caso di elefantiasi congenita. Napoli, 1894.

Moncorvo—Sur trois nouveaux cas d'éléphantiasis congénital. Ann. de dermat. et de syph. Paris, 3e sér., t. VI, 1895.

Moncorvo—Trois nouveaux cas d'éléphantiasis congénital. Teratologia, London, No. 2, v. II, 1895, p. 79.

Moncorvo—Sur la pathogénie de l'éléphantiasis congénital. Paris, 1895.

never had either lymphangitis or erysipelas. The result of this marriage was five children, one of whom died from a fever. The mother never had measles, scarlet fever or diphtheria, but before the birth of our patient was attacked with fever and an erythema which followed the course of the temperature.

Towards the sixth month of her pregnancy she fell on her abdomen, but no serious harm was done. Some time before she went through a violent emotion provoked by a fight between two individuals who inhabited neighboring apartments.

Labor lasted about thirty-five hours, but the child cried hard after birth. The persons who were present immediately recognized a deformity of the right half of the face, which was more developed than the opposite side. The delicate and sick child was nursed by its mother. It contracted measles at the fifth month.

Here we must add that three months after her confinement the mother was taken ill with acute lymphangitis of the left arm, ending in the formation of two abscesses, one at the bend of the elbow and the other in the axilla.



CASE I.

When I examined the little girl it was easy to see that the deformity of the face was due to an abnormal production of a soft, elastic, uniform and indolent tissue, which spread from the zygoma to the external commissure of the eyelids and back to the insertion of the ear posteriorly from the mastoid process to the inferior border of the thyroid cartilage.

The measures taken at the region occupied by this neoplasm gave the following results:

From the zygoma to the left border, 17 centimeters.

From the right labial commissure in

a right angle to the maxillary bone, 9 centimeters.

The skin did not show any appreciable modification regarding its color and temperature, but it was adherent to the subjacent tissues.

The mother of the child told me that the morbid growth had not increased since birth.

Continuing my examination, I found several external signs of congenital syphilis, such as coryza, dating back to the first months of life; dental erosions, prominence of the forehead, of the palatine vault and curvature of the tibiæ. She told me that the child had never had any lymphangitic or erysipelatus eruptions.

For treatment I painted the surface of the elephantiasis with a solution of gutta-percha containing ichthyol in the proportion of 10 to 100. Forty-eight hours after this application I found a favorable modification; the tumor was reduced by 2 cm. in its greatest diameter. I intended to help the prompt and efficacious action of ichthyol by the application of the Faradic current, but I was prevented from doing so because I had no chance to see the case again.

There are several interesting points in the history of the case just reported.

1) The pre-existence of lymphangitis followed by elephantiasis in the maternal grandmother of the girl.

2) The trauma to the abdominal parietes of the child's mother in the course of the pregnancy which preceded the birth of this child, and the violent emotion caused by fright at a more advanced period of pregnancy.

3) The attack of acute lymphangitis followed by suppuration a little while after her confinement.

4) The beginning of the elephantiasis during intra-uterine life.

5) The unusual seat of the morbid process.

Case 2.—The second case was a girl two years old, brought to me in April, 1896, for hypertrophy of the two lower extremities, which was noticed immediately after birth. The family antecedents were the following: Her maternal grandmother was healthy and had never been sick with ery-

sipelas or lymphangitis. Among fourteen maternal uncles and aunts one had been taken ill with lymphangitis of one leg and later on of one arm, followed by suppuration. The maternal grandfather and the mother had always enjoyed good health.

Her father, emaciated for some time, coughed and had had several hemorrhages from the lungs. This girl was the youngest of three children; the two elder ones had never shown any sign of lymphangitis or erysipelas. Her mother said that her pregnancy and confinement were normal; the child was born under good conditions of general health.

At the birth of the child the midwife was surprised at the dimensions of the lower extremities, which she called very fleshy.



CASE 2.

At my first examination I found signs of rachitis, such as the persistent opening of the anterior fontanelle, excavation of the palatine vault, curvature of the tibiæ and associated with these were signs of hereditary syphilis, coryza, alopecia, ganglionic tumefaction, etc.

It was not difficult to recognize the retardation of her physical and intellectual development. She had only the two inferior incisor teeth, and had begun to walk a short time before.

At first I verified the hypertrophy of the lower extremities; this hypertrophy decreased towards the thigh. The examination proved that this was due to an elastic tissue en-

veloping the legs and the tarso-meta-tarsal part of feet; the toes were free. This elastic and uniform tissue was indolent and much more abundant on the dorsal side of the feet. The skin which covered it was adherent to the inferior plane, and did not offer any appreciable change of temperature, but had a marbled aspect. The sensibility to heat and to pain was diminished. I learned from the mother that the size of the extremities of her child grew for some time after birth, but since then has remained stationary. It rendered walking difficult and waddling.

The dimensions were as follows:

	Right Side.	Left Side.
Circumference at the line of the tarso-metatarsal articulation.....	12 cm.	12 cm.
Circumference at the level of the tibio-tarsal articulation.....	11½ cm.	11 cm.
Circumference at the inferior third of the leg.....	14 cm.	13 cm.
Circumference of the middle part of the leg.....	16½ cm.	15 cm.
Circumference of upper part of the leg.....	21 cm.	21 cm.
Circumference of lower part of the thigh.....	19 cm.	17 cm.
Circumference of middle part of the thigh.....	19 cm.	18 cm.
Circumference of upper part of the thigh.....	21 cm.	21 cm.

As this child was taken away from my service a little later, it was impossible for me to try any treatment.

One could not obtain any valuable reports about the family antecedents on account of the low intellectual standing of the mother, but the condition of the girl at the moment of its birth, and the abnormal development of feet and legs, which the examination proved to be due to the production of an elastic tissue with the character of elephantiasis, are known.

The two cases reported, together with those of the same nature reported already by me, make in all twelve cases of congenital elephantiasis, which may be classed in the following way: According to the age of the children at the time of observation—

12 hours.....	1 case.
2 months.....	1 “

5	"	3 case.
7	"	1 "
11	"	1 "
12	"	1 "
14	"	2 "
2 years		1 "
3	"	1 "

Total..... 12 cases

According to sex—

Boys.....	6 cases.
Girls.....	6 "

12 cases.

According to race—

White.....	7 cases.
Half-breed	4 "
Black.....	1 "

12 cases.

According to the location of the disease—

Face	1 case.
Both feet.....	3 "
Right foot.....	2 "
Both legs and feet.....	1 "
Both legs.....	1 "
Left leg.....	1 "
Right leg.....	1 "
Trunk and arms.....	1 "
Trunk and right arm.....	1 "

12 cases.

According to the type of the disease—

Sclerotic form	9 cases.
Soft and sclerotic.....	2 "
Soft, sclerotic and papillary.....	1 "

12 cases.

According to family antecedents—

Maternal grandmother affected with elephantiasis of both extremities..	1 case.
Father affected with lymphangitis of legs.....	1 "

Mother having had lymphangitis of right leg.....	1	“
Mother having had lymphangitis of the abdominal walls.....	2	“
Maternal aunt affected with suppurating lymphangitis of one arm...	1	“
Maternal aunt affected with elephantiasis.....	1	“
Negative history	5	“

12 cases.

These two new cases must be grouped among the cases of congenital elephantiasis of sclerotic or fibromatous form, and not among those called soft or cystic, according to Virchow. In my preceding reports I claimed, before anybody else, that the inflammatory processes of the lymphatic vessels were the cause of the elephantiasis, which started during fetal life, and was due probably to the streptococcus of Fehleisen, brought into the maternal circulation by way of the placenta. I remarked besides that this penetration was effected by a traumatism of the mother's abdomen, which, by injuring the placenta, facilitated the passage and invasion of the microbes.

The transmission of virulent maladies from the mother to the fetus by way of the placental circulation can not be disputed any longer. After the interesting researches of Strauss and Chamberlain concerning the anthracoid bacteria, a great number of similar experiments have only confirmed these statements.

Netter, Foa, Uffreduzzi, proved the same by experiments upon guinea-pigs and rabbits, i. e., the passage of the pneumococcus through the placental vessels into the fetus. The experiments of Neuhauss, Rehet, Chautemesse, Widai and Egiglio showed the same result concerning the bacillus of Eberth.

Perroncito and Carita proved the transmission hydrophobia during intra-uterine life. The same part was put into evidence concerning glanders by the experiments of Loeffler, Cadeac, Mallet, Ferraresi and Guarrieri.

It would be useless to recall the heredity of rubeola, scarlatina, variola, typhoid fever and tuberculosis, although the fact is proven bacteriologically only for the two last named.

According to the teaching of Malvoz, the placenta which can be penetrated is injured by pathogenic bacteria; the placental lesion is therefore the first step towards fetal infection. Also, Charrin tried to prove the direct action of toxins as the preparatory act for the placental penetration either by a cellular or vascular alteration, favoring the diapedesis and the transport of bacteria by the leucocytes.

According to that, one would think that the healthy placenta was impenetrable to germs, but Ausset (Sechegron: *Les infections fetales intra-uterine, etc.*, in *Journ. de cl. et de thér.* Baoût, 1896) proved in a paper read before the medical society of Toulouse, through experiments upon animals, that pathogenic bacteria could find their way through a perfectly healthy placenta. Besides that, Demelin, in a very interesting paper read before the same society, proved the fact of a direct contagion of the fetus by way of the amniotic fluid, a fact which had been contested or at least judged to be rare by Birsch-Hirschfeld, Chantemesse and Vidal, Hergott and others. In his experiments in the laboratory of Prof. Tarnier, upon the macerated fetus, together with Letienne and with Demelin, found in the blood of the organs of the fetus (heart, liver, spleen, cerebro-spinal fluid) an abundant growth of pathogenic bacteria, composed of staphylococci and coli-comunnis. Should not one be inclined to attribute the death of the fetus to the infection of the mother? One must state the fact indicated by my observations, that the virulence of the streptococci present in her organism may be increased either by lymphangetic accidents in the course of pregnancy or by traumatism of the abdominal walls. On the other hand the bacteriological examination of the serum taken from the leg of one of my cases of deformity due to congenital elephantiasis by my son enabled us to find the streptococcus of Fehleisen. The mother of this child had been affected with suppurative lymphangitis during pregnancy.* Simone, on his part, demonstrated the passage through the placenta of the streptococcus pyogenes, considered to be identical by some observers to the streptococcus of Fehleisen. Runge and Kaltenbach had already found the epidermic desquamation in the fetus from women affected by erysipelas.

*See Moncorvo, fils:—Des lymphangitis dous l'enfance et leur consequences, Rio de Janeiro, IV, 1897.

A still more instructive example furnished us is a case reported by Lebedeff. A pregnant woman, affected by erysipelas of both legs, was delivered in the sixth month of a fetus which died ten minutes afterwards. The post-mortem examination showed an alteration of the skin, in which the lymphatic vessels enclosed a profusion of germs, with the characteristic appearance of the streptococci of erysipelas. They were neither found in the blood nor in the placenta, but in great abundance in the umbilical cord. According to Lebedeff, those micro-organisms entered through the villous membrane of the placenta into the lymphatic ducts of the appendix to the skin. Therefore it is only logical to conclude that the types of congenital elephantiasis reported by me are produced directly by an inflammatory process in the lymphatic vessels. This was started by the streptococci of Fehleisen, which found their way from the organism of the mother through the placenta.

I hope that later researches will prove the truth of this pathogenic interpretation which I was the first to suggest.

Nothing seems to have justified until now the psychical influence on the production of certain cases of the same nature reported by Waite, Esmarch and Kulemkampf, as well as by Nonne, who found in the same family several examples of edema due to elephantiasis developed during intra-uterine life.

Outside of the small number of facts produced by those causes, nothing proves the absence of other etiological condition. The hypothesis of Jordan and Archambault that elephantiasis was associated with organic weakness, is still less admitted.

Without overstating the facts which I found personally, I believe myself authorized to contest this hypothesis because of the children affected with malformation due to elephantiasis, in whom the general health was almost perfect.

In the two cases which form the subject of the present paper I was prevented from trying the action of the galvanotherapeutic measures first introduced in the United States by Beard and Rockwell, and later at Rio de Janeiro by myself, with the collaboration of my colleague, Silve Aranjó.* The

* Moncorvo et S. Aranjó—Du traitement de l'éléphantie par l'électricité. Acad. des sc. de Paris, 1879.

Moncorvo et S. Aranjó—Sur le traitement de l'éléphantiasis des Arabes par l'emploi simultané des courants continus et des courants intermittents. Acad. des sc. de Paris, 1880.

continuous current for the less advanced cases, electrolysis for advanced cases, are in reality the surest methods to fight the malady. Combined with rest, elastic compression, iodotherapy, and intestinal derivatives, we may hope to obtain the best results.

Moncorvo et S. Aranjo—De l'électrolyse appliquée à l'éléphantiasis des Arabes. Bull. de l'Acad. de méd. de Paris, 1880.

Moncorvo et S. Aranjo—De l'électrolyse appliquée au traitement de l'éléphantie. Ac. des sc. de Paris, 1881.

Moncorvo et S. Aranjo—De l'emploi de l'électricité dans le traitement de l'éléphantie. Note communiquée au congrès int. d'électricité de Paris, 1881, in Journ. de thérap. de Gubler, Paris, No. 1, 10 janvier, 1882.

Moncorvo—Sur la pathogénie de l'éléphantiasis congénital. Journ. de cl. et de thérap. infantiles. Paris, 1895.

THE MENTALLY FEEBLE CHILD AND HOW TO TRAIN HIM.*

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ESPECIAL prominence has been given to children of this class, owing to the appointment of a Departmental Committee on defective and epileptic children, which is now sitting and taking evidence respecting those, as well as feeble-minded children. Before proceeding to describe the mentally feeble child, I wish to impress upon you that we have not only mental but physical defects to deal with, and to improve the former it is necessary at the same time to ameliorate the latter condition. Then, again, I wish to point out that some of the defects I am going to describe are in many cases very slightly marked, but they exist and can be seen in many children, and it is necessary that they should be delineated so that you may know what to look for. When describing them before a medical audience it is usual to divide them into cases which make their appearance at the time of birth, and those which come on after that date, but for the purpose of this lecture this division may be disregarded and all cases treated from the same standpoint.

First, we will take the size and shape of the head. Now, in very many cases, there is nothing important to be noted about it, but in others we find it is very small, being in circumference from $15\frac{1}{2}$ to $17\frac{1}{2}$ or 18 inches, though I have

*Read before the British Child Study Association, February 26, 1897

seen one child whose head measured only 12 inches in circumference. In that child, it is needless to say, very little could be done to improve her, but taking the other class, that is, those whose heads measure from 15½ to 17½ or 18 inches, more especially in those whose heads attain the higher measurements, a fair amount of improvement can be noted. In these children we find not only a small head, but a retreating forehead, which is often narrowed from side to side, so that the front part of the brain, which is supposed to be the seat of the intellectual faculties, is very small indeed. The occipital portion, or back part of the head, is usually flattened and the brain in that position not properly developed.

Then, coming to the opposite side of the scale we have heads which are too large in size. This condition may be due to two causes; first, from the pouring out of water into the brain substance, and secondly, from overgrowth of the brain itself. The latter is a comparatively rare disease and I do not intend to attempt any description of it. Taking, then, the first head, which is often called the hydrocephalic head, we note that it is rounded in shape, especially at the temples and in extreme cases the white of the eyeballs is plainly seen. Such extreme cases as these are not likely to come before you, so that you need only notice that the head is large and rounded in shape and will measure in circumference from 23 to 24 inches. The improvement in these children varies very much. In some, in whom the amount of water poured out is very great, the amount of brain left is small. These, again, are not likely to come before you, as they would be unable to walk to school. Taking the heads of the smaller size, we shall find that they are able to read and write, and do some, but not much, arithmetic.

There are a good many other heads which we may find, such as the keel-shaped head, the sugar-loafed head, and heads which are twisted obliquely, but as these are not often met with I do not now intend to describe them.

Next, it is important that we should examine the palate. Some time ago it was thought that by the shape of it we could decide whether the child was born feeble-minded, or whether the mental defect came on after birth, but later enquirers have contested this point. The palate may be too highly arched so that it assumes the V shape, or it may be too narrow

from side to side, or it may be otherwise deformed. Here I must guard myself from a common fallacy, viz., that because the child has a defective palate, he is therefore feeble-minded. This is not so, for there are very many people in the world who have defective palates, and who are in full possession of all their faculties. Still, it is a condition to be looked for, and it is a combination of this with other signs to be afterwards described, which go to make up the deficient child. All the signs which I have and shall afterwards mention may not be found in one child, but some of them exist and are to be looked for.

Next let us examine the eyes. In many children you will find that these are constantly wandering; they are restless and cannot be fixed for long at a time. Children whose eyes are in this condition are often good looking and apparently likely to improve, but unfortunately this is not so. It is impossible to fix the attention of the child, and those of you who are teachers know that if the attention cannot be fixed, none or very little improvement can occur. On the other hand, the child may have a fixed stare and take no notice of objects which pass before him. He is not blind, but from want of development of his brain and low intellect he does not perceive the objects before him. Inability to perceive color and to calculate size and distance arise from the same cause. We shall presently see how this state of things is to be remedied.

On looking at the ears we often find them too large and implanted too far back, or some portion of them is defective, or they may not be symmetrical on both sides. Very often the lobule is adherent to the skin behind and on further examination we shall find that the hearing is defective. All these children are fond of music, and it will be noticed that when the hearing is unimpaired they can hum a tune when they cannot speak a word.

Then the face as a whole should be studied. Many have an animal or low type of face; while in others it is asymmetrical. Very often the mouth is kept open, or the thick lips remain apart from want of muscular power to shut them. In these children there is often a dull look, so that you would say on observing them that there is evidently an absence of intelligence. There is either a fixed stare, as I mentioned before, or the features, on the other hand, may be over mobile and the expression is constantly changing.

On looking at the body generally, we notice that there is often a slouching gait; there is, in fact, a want of co-ordination of the muscles of the body and the limbs; the hands, too, cannot be kept still and with difficulty perform simple acts, such as picking up a pin, buttoning clothes and so on. You will notice, too, that the child either sits still in one place and does not care to move about, or on the other hand, that he is very restless and constantly wants to be moving about from place to place.

The speech is often defective and in those who can speak there is mumbling and indistinctness in the pronunciation of words, or simply an ejaculation of sentences. In other cases there is a mere ejaculation which bears no resemblance to any word. The highly arched palate, the open mouth, and the inert lips, which I mentioned to you, add to the vocal difficulty. In addition, there is also a want of proper co-ordination between the muscular efforts of the lips, tongue, throat and chest, and this is the chief cause of the defective voice. You will, no doubt, see that if we do not get combined action of all these parts, it is impossible that the speech can be perfect.

All the special senses may be defective and the common sensation which we all possess is usually less acute than in ordinary children, so that children of this class do not suffer pain to the same extent as sane children do. The fact that the mentally feeble child has had a finger burnt by fire will not always prevent him from putting a finger in the fire again.

There are two types of the mentally feeble child not previously referred to, and it is necessary that I should describe them. First, the Mongol type. Children of this class are so called from their supposed similarity in their facial appearance to the Chinese. They are, if I may say so, unfinished children and are characterized by usually shortness of stature, broad features, obliquely placed orbits, flattened bridge of the nose, defective ears, hypertrophied or too large papillæ of the tongue, which presents transverse fissures, rough skin, and hands and feet short and broad. They are imitative and see the comic side of everything. Their circulation is feeble and they are very subject to bronchitis. The other is the dwarf or cretinoid type. I have a child of this kind now under my care, who, though he is 17 years of age, is only 3 feet 2 inches

in height. The head is usually large and covered with coarse, sparse, dry hair. The nose is pug-shaped, the cheeks full and flabby, the mouth large and the lips thick and often kept slightly apart. The ears are large, but not malformed and the neck is short and thick. Often there are swellings on both sides of the neck. The arms and legs are short and curved and the hands and feet, though small, are broad, thick, and often dry and scaly. The circulation is weak. The voice is rough, hoarse, harsh or squeaky, the gait is waddling and there is often repugnance to making any movement. Speech is limited to a few simple words. They are good natured, placid in temperament and fond of those who have to attend upon them.

Passing from this brief description of the mentally feeble child, I will now mention the principles on which he should be trained. They consist of a judicious combination of hygienic, medical, physical, moral and intellectual treatment. Frequent baths, a plain but liberal diet, warm clothing and plenty of exercise constitute the essence of the hygienic treatment. The medical treatment does not now concern us and the three latter methods may be summed up in the word "educational." The ground-work of this method of treatment is the application of physiological principles to remedy the defects met with in the child. Seguin was the first to develop this method, although Itard, physician to the Deaf-Mute Institution in Paris, had previously put some physiological methods in practice in attempting to educate the wild-boy, or as he was called the "Savage of Aveyron." This boy was found in the woods of Aveyron and brought to Paris, where he excited a good deal of interest among physicians and philosophers. He was unused to ordinary food and selected what he did eat by smell; lying flat on the ground and immersing his chin in the water to drink; tearing all sorts of garments and trying constantly to escape; walking on all fours, fighting with his teeth, and having no articulate language, though he was kind, complaisant and pleased at receiving caresses. Itard undertook his education, not with the object of improving or curing him, but "to solve the metaphysical problem of determining what might be the degree of intelligence and the nature of the ideas in a lad who, deprived from birth of all education, should have lived entirely separated from the individuals of his kind." As a

matter of fact the boy was an idiot and Itard was the first, therefore, to apply physiological methods in endeavoring to remedy the effects of this condition. These methods were immensely developed by Seguin, who devoted his whole life to the improvement of children of the class of which I have been speaking. His method, he says, "consists in the adaptation of the principles of physiology, through physiological means and instruments, to the development of the dynamic, perceptive, reflective and spontaneous functions of youth." He laid down the law that "the education of the senses must precede the education of the mind," and it is on these lines that the education of the mentally feeble child is carried on. As I mentioned at the beginning of this paper there are not only mental but physical deficiencies in these children and it is necessary to improve both conditions. We have not only to educate the senses, but endeavor at the same time to create co-ordination of the muscles, and so improve the manual and mental activity. I mentioned in a former part of this paper that the child may be inclined to sit in one place and is, in fact, apathetic, or, on the contrary, is constantly on the move and rushes about from place to place. This, it is necessary to bear in mind as the treatment of the two varieties is quite different, for while the apathetic child has to be roused, the excitable child has to be soothed.

Mentally feeble children have to be taught many ideas and notions which ordinary children pick up for themselves; the latter are also endowed with the full use of their senses, while, as I have before mentioned, in the former they are badly developed.

It will be convenient to describe first the sensorial training, though, as a matter of fact, it is a judicious combination of the different kinds of training which is required. The *tactile* function is the most important of the senses, all the others being mere modifications of it. Herbert Spencer has shown how, by evolution and specialisation, the other senses, sight, hearing, smell and taste, could have sprung from touch; and how touch is a universal language into which the other senses, which are special languages, would, at first, have to be translated in order to be understood. We commence then by training the sense of touch. In very low class cases it is a common practice to educate this sense by means of a board in

which wooden pegs or nails fit, and which can be taken out and put in again. Other means are the handling of smooth and rough, heavy and light, hard and soft substances, and plunging the hand into hot and cold water so that the child may distinguish the difference between them; the use of materials which are wanted in the daily habits of life will also aid us in educating this sense. In some cases the nerves of touch are unusually sensitive and the child is the subject of what we call hyperesthesia or over-sensibility. In this case it is necessary to overcome the morbid sensitiveness by means of repeated friction against hard substances, such as carrying bricks, the use of the spade, etc. An instance is on record in which several members of a family, both boys and girls, experience instinctively on touching cork, or the downy skin of a peach, such an internal sensation of shuddering repulsion that the very sight of the fruit is unendurable to them, and the fruit has, therefore, to be given to them with the skin removed.

The next important sense is *sight*, and this is taken next in the order of training.

You may remember that I mentioned that in some children the eyes moved restlessly, while in others there is a fixed stare.

These two conditions will require different treatment. In the first child we have to fix the gaze of the restless eye, or as Seguin says, "to fix the regard by the regard." This is best managed by sitting opposite the child and holding his head in our hands and fixing the eye of the child by our own eye. This will take time, but it will receive help from the general training and from the special training now to be described. In some institutions there is a dark room in which light appears at intervals, but we need not go to such an expense as this, for any glittering object will do as well, or the kaleidoscope may be put into use. If this is of large size and composed of two cylinders revolving in opposite directions, it produces a marked attraction for the vision. The perception of color is taught by the aid of paper of various tints which the child should match, colored cups and balls which he should pair, the matching of different colored ribbons and wools, afterwards applying this familiarity to objects which are daily in use. The idea of form is best taught by what are known as form-boards, which contain depressions into which circles, triangles,

squares, oblongs, etc., have to be placed, and the idea of dimensions by placing pieces of wood of various sizes together and pointing out the distance between them and making the child copy the teacher. These last two exercises train the hand as well as the eye. The notion of distance is obtained by separating objects from each other and then taking measurements from point to point in a room and afterwards out of doors. At first it will be well for the teacher to place the objects, say books for instance, at different distances and make the child do the same; later on the child can be made the fixed point or object and the different points of the room, such as the windows, piano, etc., will be the other point or object. Care should be especially taken that in developing the sense of vision the eyes themselves should move and not the head. Dr. Warner has shown that this defect exists in ordinary children at school and it applies much more to mentally defective children. The fixed stare will be removed by exciting the child's interest in the various objects which have been mentioned.

Next the sense of *hearing* is to be trained. Excluding those cases where the deficient hearing is due to disease of the ear and also deaf mutes, we shall find that the child is what Seguin calls "intellectually deaf"—that is, the waves of sound do not make any impression, or only a slight impression through the auditory apparatus on the brain. For developing this sense music should be resorted to; fortunately all mentally feeble children are fond of it, and we can often make the child listen to a pleasant tune or song when he would take no notice of our voice. Later on we can teach him to discriminate between the various sounds presented to his ear, using not only the piano, but a trumpet, or drum, or other instrument.

The senses of *taste* and *smell* are awakened by a series of experiments with disagreeable or agreeable, odorous or odorless substances and the qualities of objects are thus ascertained. When the child is familiar with a certain number of them, his eyes should be shut, and the materials presented successively to the tongue and nostrils, which have to discern between them, without the help of the touch, sight or hearing. To awaken the sense of smell, strong ammonia in a smelling bottle, or the strong perfume of some flowers will be found useful; and for taste, salt and sugar at once occur to us.

At the same time, as we are developing the senses we have to improve the physical defects and imperfections which are so often present. If the muscles are wasted, they must be nourished by calling their functions into activity, and for this purpose certain exercises, in which the faculties of imitation and attention are brought into use and which will be presently described, are required. These exercises will also correct the want of co-ordinating power, which is shown by the entire absence of the ordinary precision of muscular movements. Simple exercises of head and limbs, or dumb bell drill (the dumb bells being made of wood), accompanied by music, will be found useful for this purpose, as will the practice of throwing a bag containing beans, rice, or some similar substance, at the pupil who first puts up his hands to protect himself from it, and afterwards learn to catch it and throw it back, showing that the grasping power has been developed. The co-ordinating power of the hands is also strengthened by the use of the wooden-peg boards and the form boards previously mentioned, by threading beads, building bricks, paper plaiting, and many similar lessons. Exercises in buttoning and unbuttoning clothes, lacing boots or pieces of leather, tying knots, etc., will further help to improve the movements of the fingers. These exercises of course educate the eye as well as the hand. The legs are trained by making the child walk upon or between the steps of a ladder placed upon the ground and by the use of the apparatus to be found in every gymnasium.

On the other hand, the restlessness of the excitable class of children must be soothed by appropriate remedies, such as the use of music, the singing of simple tunes, an elementary form of drill, and by encouraging the child to make use of his toys, such as bricks which he can build up and then knock down again.

Speech depends upon a proper co-ordination of the muscles of the lips, tongue, throat and chest, and unless these act in unison speech will be defective: as a rule we find that this is the case in mentally feeble children. For the purpose of this lecture I assume that there is no deafness, nor disease of the speech-center of the brain. In many children the lips will be noticed to be what we call inert or atonic; that is, they cannot be freely moved, or the mouth will be kept open; the tongue, too, wants control. To improve these

organs it will be useful to insert a piece of wood between the lips and make the child keep it there for a few minutes; in this way he will learn to close the lips and keep them in apposition for some time. Exercises in opening and closing the mouth will follow, as well as different movements of the tongue, such as moving it from one side to the other, and touching the roof of the mouth and the teeth with it. By these means we shall help to remove the defective co-ordination of the lips and tongue, and so far improve the articulation.

The next thing is to instruct the child in the use of the labials, linguals, gutturals, etc. Syllables composed of a consonant and vowel, the former preceding the latter, should be taught first, and in practice it will be found more easy to cause articulation of repeated syllables than isolated ones, thus the child will more easily say ba-ba, or ma-ma, than the word "ba" or "ma" by itself. The use of music will materially assist in the education of speech, as all these children are fond of it, and as I before mentioned they will often hum a tune when they cannot speak a word. The use of simple nursery tunes, such as are found in Elliott's National Nursery Rhymes, are very serviceable, for the child will often pick up one word and then another, and so gradually begin to speak. In practice I have found it useful to select a number of simple objects, which are represented by words of three letters, and get the child to name them; I have a child under my care now who is picking up quite a number of words in this way.

With regard to the higher branches of learning, I would impress upon you that in every case it is necessary to proceed from the simple to the complex, teaching ideas by the use of concrete forms and not by abstract notions. Parrot knowledge is of no use whatever, and care must be taken that the child thoroughly understands everything that is taught him. Object lessons are especially useful; the objects of everyday life should at first be taught, and afterwards more complex ones. The latter can be represented by means of pictures, or boxes containing a variety of objects can be purchased and lessons given on these. Reading is best inculcated by what is known as the "word-method," by means of word cards, care being taken to present the object with the word and to see that the child knows the exact significance of it. Afterwards the letters

can be taught by means of letter cards, any given word being thus built up or dissected. As regards writing the teacher represents on the checkered blackboard large-sized letters and the child prints these on slates similarly prepared. Drawing is also taught in the same way. The teacher draws on the blackboard horizontal or perpendicular lines, squares, oblongs, etc., etc., and the child copies these on his slate as before. Later on small-sized letters and more complex forms are produced. Arithmetic is a stumbling block to all these children, and numbers are taught by means of beads, the ball frame, etc. The child has to handle number one, two, etc., or the idea of number will not be understood. The child can be easily taught visually to recognize the figures 1 to 10, etc.; but the child must, if I may so say, handle them, as represented by some objects, to thoroughly understand them. By means of objects addition and subtraction can be taught, and later on multiplication and division can be learned in the ordinary way. The idea of weight and the value of money is best taught by the shop lessons, in which the child weighs out the article required and another child buys it with money supplied to him.

Next comes the industrial training. The paper plaiting I mentioned previously when describing the work of developing the sense of touch will help in teaching sewing, and so will the samplers now in use representing animals, axes and the like. Cane weaving, simple basket making, as well as the paper plaiting are excellent methods of manual training, and may be put into use by both boys and girls. Clay modeling, sloyd-work, and fret work will lead on to carpentering for the boys, who should also be employed in gardening and farming, while the girls can be employed in sewing, knitting, fancy work and in household duties. Poor children will require to learn tailoring, shoemaking, brush-making, mat-making, etc., in order that they may afterwards be able to find employment; while the girls can be employed in the laundry and in household work. Varied amusements, both in summer and winter, should be provided, for if the old adage, "all work and no play makes Jack a dull boy," is applicable to the mentally sane, it is infinitely more so in the case of feeble-minded children.

The moral training should go on side by side with the

physical and mental treatment. The teacher should endeavor to inculcate ideas of justice, duty, self-reliance, prudence, forethought and perseverance, and employ all the means in her power to cultivate the faculty of attention. The existence of a Supreme Being who governs and watches over our actions should be impressed upon them; but religious instruction, illustrated by parables in the Bible, should be as plain as possible. Obedience must be taught and efforts made to impart good temper and affection. Children of this class have loving dispositions as a rule, and by taking advantage of this characteristic, selfishness, obstinacy, and untruthfulness may be checked. A system of rewards and punishments is also a useful method of moral training.

An exception to the affectionate disposition of the mentally feeble child is the "moral imbecile," a child who is intellectually sharp and clever, but morally a thief, a liar, full of cunning, horribly cruel and often of immoral tendencies. When remonstrated with, he will express contrition and promise amendment, but these promises are forgotten as soon as a fresh outbreak occurs. Children of this class should be placed in special institutions, where they should undergo training and be kept under control during the period of their life.

PEDIATRICS: ITS IMPORTANCE.

By WM. SWEEMER, M.D.,

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IT is a remarkable fact that the ailments of infants and children are seemingly the least fascinating of the various branches of medicine to the profession in general.

Possibly this may be due, first, to the greater time it requires to thoroughly examine a child; next, the fear, agitation, or refractoriness of the patient, often taxing the physician's patience to the utmost; thirdly, the greater skill it requires to make a correct diagnosis where intelligent speech is wanting; and lastly, the lack of a thorough knowledge of the maladies peculiar to early life.

The loopholes of former years, that the child was teething or had worms, have been supplanted by a more rational and intelligent knowledge, and consequently a more correct diag-

nosis of the various ailments among children. According to the best teachers and writers, it is safe to say that 60 per cent. of all the ailments of mankind occur during childhood.

Henoch gives the mortality in large cities as two hundred deaths in every one thousand during the first year of life. He attributes this mortality to two principal causes: one, the natural development of the child's body tending to evoke pathological changes in the nervous system, glands, and skeleton; the other factor, the condition of the child's environment, lack of care, impure air, improper feeding, cold, hunger, and hereditary influences; he also believes that much of the mortality is preventable by judicious medical treatment and other salutary influences. This branch of medicine is so important, and yet so much misunderstood and neglected, that it is estimated that fully one-half of mankind die before they reach the fifth year of life.

No department of general medicine constitutes a larger or more important part of the practice of medicine to every general practitioner than does pediatrics.

Diseases of children do not differ materially from those of adults. The causes, morbid changes, course and general management, are in the main the same. Many affections, however, are peculiar to early life, and a slight factor may cause grave disturbances. Immediately after birth, the temperature range is very variable; on the first day it may go above 100° Fahr., and on the following day may go a degree below the normal without apparent cause, yet a condition which usually counts for naught. Conversely, the first few days of life the lack of food or fluids may cause a high temperature, throwing the child into a convulsion, often ending in serious results.

Again, a little dietetic knowledge on the part of the attending physician would often prevent serious trouble, such as malnutrition, rickets, marasmus, etc. More can often be done in the way of prevention of the diseases peculiar to childhood than can be accomplished by treatment after the disease is once established. If infant physiology were better understood, many a case of indigestion and diarrhea would be prevented, and considerable worry and many sleepless nights would be spared to the mother or nurse.

The infant of to-day is the man of to-morrow; neverthe-

less he is subjected to many physiological evolutions before he is fully matured. The secretions from the mucous surfaces and glands are wanting, or are very scanty, such as the secretions of saliva, gastric juice and tears.

The disproportion of some of the internal organs is very marked. This condition is not alone confined to the viscera, but to the skeleton as well. For instance, the disproportion of body and limbs being quite marked at times; this lack of uniformity and symetry is not an abnormal condition.

I have aimed to show that the infant or child is not the small man and that there is no fixed ratio of development; hence, some excuse exists for an annex to general medicine in this special line of work.

It will be conceded that it requires greater skill to make a correct diagnosis of a given case in which intelligible speech is wanting than in an adult, who is able to point out the seat of trouble or give other information which will greatly aid the physician; but in diseases of children, the diagnosis will chiefly rest upon the physician's own observation and examination.

I do not wish to be understood that I consider pediatrics as a specialty, but only as a part of general medicine; still, it constitutes a large and important part of the practice of medicine. It is the family doctor who counsels the mother before the birth of her offspring; it is he who ushers them into the world, prescribes their diet, and guides them through the trying period of childhood.

That pediatrics was slow in assuming the dignity of a special department in colleges was perhaps due to the fact that in actual practice diseases of children fall to the lot of the general practitioner; but because of the well-recognized neglect on the part of the general practitioner of this especial field of his work, a field of inquiry has been opened up by those who have given this subject earnest attention, which has been fruitful in its results and which must inevitably reclaim thousands from an untimely grave.

It was not until the year 1860 that Professor Jacobi established a weekly children's Clinic in the New York Medical College, and some ten years later in the College of Physicians and Surgeons of New York. At the present time the greater number of the medical schools of this country have followed this laudable example.

According to Professor Jacobi, Great Britain fares but little better than our own country regarding the lack of instruction given in pediatrics in medical institutions; while in Germany, France, Italy, Austria, Sweden, Holland and Russia, the study of diseases of children is obligatory, and is made one of the conditions of graduation.

Kelley, in a recent address delivered at the meeting of the Ohio State Pediatric Society, on "The Past, Present and Future of Pediatrics," stated that he had sent letters of inquiry to many teachers in the various medical schools of this country, and a few in Great Britain, and that the replies were sufficiently explicit for tabulation. Kelly's opinion, based upon these reports, is that even to-day this branch of medicine is not receiving the attention its importance warrants. He further states that in sixty-five colleges in this country and Canada, pediatrics is taught as a separate branch in fifty; and in connection with another chair, in fifteen. The teaching is acknowledged to be didactic in but nine colleges, clinical in but five, and claimed to be both didactic and clinical in fifty.

As to the number of hours devoted each week to the teaching of pediatrics, two hours were reported in the greater number of colleges, while in a large number but one hour a week was given.

In fifty-five colleges this branch is taught to both seniors and juniors in twenty-eight; to seniors only, in twenty-two; to juniors only, in two.

It will be seen by this partial report that a decided advance has been made in the last decade.

In 1884 pediatrics was barely recognized as a special department of medicine. There were numerous clinical professors of diseases of children, but there was not a pediatric society or academy in this country to stimulate men to work in this branch; notwithstanding much has been accomplished the past ten years, there is still much to be done in this special branch of medicine.

The consciousness of this fact is my apology for having, at this time, brought this subject to your attention.

EDITORIAL COMMENTS.

Opium Habit Among Children.

The pernicious effect of opium on children has long been universally recognized. The British Opium Commission, however, appear to have arrived at a different opinion in regard to the habit with Hindu children. The report made by the commission states that from 60 to 90 per cent. of Hindu babies are dosed with opium. The drug is given almost from birth up to the end of the second or third year, when it is usually discontinued. In some instances the practice is continued until the fifth year. The labors of the commission tend to show that no ill effects are experienced by these children in after life. On the other hand opium, when administered to English children in India (it is often given to them secretly by the native nurses), has a most disastrous effect. Sir William Roberts contends that this tolerance on the part of native children is congenital and cites in support of this view the evidence of many English medical practitioners living in India in respect to the different effect of opium on native and English children. Some of those who were witnesses before the commission went so far as to express their opinion that opium was not only beneficial but even almost necessary to keep the native infants alive. This defence can hardly be looked upon as a strong one, as this very freedom from any seeming ill effects is rather a proof of the taint of degeneracy than a testimony to the harmlessness of giving opium to children. In parts of England, in the Eastern countries, and specially in the Feu portions of that division of the country, the custom of taking opium largely prevails. The land there is marshy and low-lying, and in consequence malaria is always present and opium is taken to subdue its unpleasant manifestations. The inhabitants of this district exhibit many signs of degen-

eracy and the infantile mortality is very high. The conclusions the British commission have come to will fail to convince the majority of medical men that the administering of opium even to Hindu children can have any ultimate good results.

Juvenile

Suicide.

Within recent years suicide has been greatly on the increase in all parts of the civilized world. In thirty American cities the number of suicides increased from 1826 in 1895 to 1999 in 1896, or at the rate of 9.8 per cent. per annum. This increase is in itself most deplorable, but is not the saddest feature in the present day tendency to self-destruction. This tendency is spreading at a rapid rate among quite young children. In this country suicide commences at a very early age. During the past ten years more than a thousand boys and girls below the age of sixteen years have taken their lives. In New York alone from the year 1871 to the year 1876 thirty-four boys and girls committed suicide, and since that date the numbers have relatively greatly grown. In some instances those who have put an end to their existence have been little more than infants. In Europe and in Great Britain a similar state of things exists. The reasons advanced to account for this wave of suicide are many. By some it is regarded as a natural sequence of the conditions under which civilized nations live nowadays. It certainly is true and proved by the history of ancient nations that the greater advance a race makes in civilization the more are its members given to self-destruction. Civilization and suicide seem to march hand in hand. The use of stimulating and narcotic drugs is responsible for some of the deaths. Poverty, ill health and insanitary surroundings are also important factors. The sensational journals and highly spiced erotic literature of the day may be responsible for some of the cases of youthful suicide, although this explanation will not apply to the very young. However, it is plain that there is some cause or causes which drives persons to kill themselves

much more frequently than formerly, and, without doubt, the reasons for the unfortunate prevalence of suicidal tendency are many and complex. It is impossible to point to one cause and say that here is the reason or even the chief reason for the suicidal epidemic.

Unusual Coughs of Children. There are many varieties of coughs which do not proceed from pulmonary complications. Dr. Emil Mayer has recently published a pamphlet dealing with this not generally recognized fact. Some of these coughs which Thompson designates as useless are common both to adults and child, while one or two are peculiar to the age of childhood. These coughs, which are reflex in origin, are often the cause of much thought to the physician, and are by no means easy to diagnose correctly. The hacking night coughs of children fall under this category. According to Dr. MacCoy, of Philadelphia, these coughs are mostly due to naso-pharyngeal obstruction, and the reason that they are only troublesome at night is because when the child is in an erect position during the day, gravity lends its force to facilitating the escape of the secretions from the nasal passages, but at night when the child is lying down this secretion cannot escape by these means, and the cough is brought on by mechanical irritation. Again, there is the paroxysmal hacking cough of children described by Dr. Francis Warner of London. This cough occurs in children who, although emaciated and unable to eat, have a normal temperature and the physical signs of healthy lungs. Dr. Warner attributes this condition not to peripheral irritation, intestinal worms, affection of tonsils or pharynx, but to unbalanced central nerve action, and as his conclusions were based on the examination of 22,000 children in schools, he is in a position qualified to speak with authority. Lastly, there is the hysterical cough which is common alike to adults and children.

The Care of Children's Voices. Much harm is often done to children's voices when at school. How often has one heard when passing a school building the loud sing-song hum of the children's voices reciting the multiplication tables or reading or spelling together. It would appear that to speak at the highest pitch of their voices is considered absolutely necessary by the teachers. The reason is said to be that the teachers say that unless the children are permitted to speak at their loudest they cannot raise their enthusiasm. Putting on one side the injurious effects to their voices and nervous organization from this straining and excitement the system is a mistaken one in every way. The mind works best when the body is in state of quietude, and the surest way of attracting and holding the attention of an audience is not by screaming at the top of one's voice, but rather by lowering it and speaking in a low, distinct and clear tone. Distinct articulation will carry the notes of a voice further even when used in a low key, than the loudest shouting, and the fact has been clearly proved that a quiet, natural tone of voice is more effectual than a loud, unnatural one. More attention should be paid to this fact, as in many instances a child's voice is irremediably injured by the practice in vogue in the schools at the present time. A child's voice is more injured in the first two years of school life than at any later period, solely owing to incorrect training.



SOCIETY REPORT.

PHILADELPHIA PEDIATRIC SOCIETY.

October 12, 1897.

Dr. F. A. PACKARD presented patients showing examples of congenital deformities of the extremities. In the discussion,

Dr. J. T. RUGH said that these cases were of very great interest to him from an orthopedic standpoint. The case of the boy, he thought, was not one of intrauterine amputation, but a case of arrested development. There seemed to be one or two rudimentary nails at the end of the stump, which would be lacking had amputation taken place. The case was one of arrest of development at the carpo-metacarpal articulation. He had seen a case of intrauterine amputation very much like that of the little girl, which was undoubtedly such. He called to mind the case of a man forty-five years old, whom he had seen while Resident in the Jefferson, who had a double thumb, each member completely separate and both articulating with the distal extremity of the metacarpal bone. He was able to grasp an object between these thumbs with a movement like that of a crab's claw. Each thumb was complete in its formation. Each had its nail and its proper quota of bones.

Another peculiar case which he saw in the Polyclinic Hospital was that of a girl fourteen years of age, who had on one hand a finger in place of the thumb. The member bore all the characteristics of an index finger and had three phalanges. On the other hand the corresponding digit was part finger and part thumb, having two phalanges and a very large sesamoid bone. In that family there was a history of other cases of similar malformations in several generations, as is so frequent in many of these cases.

Chorea with Acute Delirium Occurring in the Course of Scarlatinal Bright's Disease.—Dr. CHARLES W. BURR reported a case. The patient was a boy of seventeen who had scarlatina, which was followed by dropsy six weeks before admission to hospital and choreic movements appeared a week

before admission. When admitted there was general anasarca and the choreic movements were fairly severe. The urine contained casts and a large amount of albumin. Next day the choreic movements became extremely severe and marked delirium appeared. Improvement followed, and in a week he was almost free of movements and the dropsy much decreased, but two weeks later all symptoms returned with great severity and death occurred about two months after admission. An autopsy was not permitted.

Dr. Burr thinks the delirium was due to the nephritis, and thinks that no direct connection between scarlatina and chorea can be traced, since both are frequent but occur only rarely in connection with each other. The same is true of Bright's disease and chorea. The cause of the latter is unknown, and while both physical and psychical agencies may give it origin, we can only say of other diseases that valvular disease of the heart is an almost constant accompaniment, and rheumatism is so frequently associated with chorea as to compel a belief in their close relation.

Home Modification of Milk.—Dr. THOMPSON S. WESTCOTT demonstrated a simple method of calculating the proportions of cream and whole milk required to make any percentage formula for home modification. The essential feature of the method lies in assuming a fixed average percentage of the proteids of mixed milk and cream. It is then a simple matter of calculation to find the combined quantity of milk and cream required for any given proteid percentage in any given total quantity of mixture. This being determined, it remains to apportion the quantities of cream and milk so that the sum of the fat percentage contributed to the mixture by each shall equal the desired fat percentage. The method may be used with any strength of cream, but it has been found that a 12 per cent. cream is best suited to the purpose, except in some instances where very low proteids are desired, when a higher percentage cream may be necessary (16 or 32 per cent.). Three simple formulae are employed, and the quantities of milk and cream to be used for any particular combination of percentages of fat, proteids and sugar can be worked out in a few minutes at the bedside without reference to arbitrary tables. The author claimed, among other advantages for the method:

(1) Greater accuracy and range of adaptability than is attained by previous methods for home modification.

(2) Simplicity in practical application.

(3) That the fat and proteid percentages can be gradually increased by an increase in the milk alone, the total quantity of the mixture being kept unchanged, and that thus abrupt change in the formula can be avoided.

Dr. F. A. PACKARD.—In the Babies' Ward of the Children's Hospital we have been using altogether the formula of Holt, with 12 per cent. cream and 6 or 7 per cent. sugar solution. While it is perfectly true the figures do not work out accurately, for practical clinical purposes it is satisfactory. I believe the more practically accurate we can get prescriptions for babies' feeding, the better we will get along, and if this formula will provide a more accurate method of making up our fat, proteid, and carbohydrate proportions, that is the one we need to use. The trouble is with our milk supplies. I know at the Children's Hospital this year, before we started this plan, I found that we were taking milk from a milkman from the country, and determined to test the milk, and found the way that milk varied was surprising. It varied from day to day. We tested particularly for fat. While our method was not very satisfactory we used the same method each time. I determined to wait a while and tested the milk again in a few weeks, and again it varied. The man was a good milkman, as milkmen go, but only as far as milkmen go! We are now using cream from the Walker-Gordon Laboratory as the only available cream of known and constant fat percentage.

Dr. GRIFFITH.—This whole question seems to me one of getting a cream that is at all satisfactory. Even if we assume that fairly good dairy milk has a pretty fair percentage of albuminoids, which is the principle the Walker-Gordon Laboratory go on—say 4%, we cannot be very sure of the cream; we do not know how the cream was gathered, whether it is centrifuged or skimmed cream, and it certainly varies greatly. It is well known that some milk will part with its cream much more readily than other milk will. It has been proven, for instance, that some milk may not give a larger percentage of cream than skimmed milk will; yet on analyzing it with the Babcock centrifuge, you may find that there is really a normal percentage of fat present. Of course, this objection to

testing with the creamometer applies as well to the use of top milk. We cannot even with this method tell what proportion of fat is actually present in the top milk, so we are really in a hopeless condition, unless we not only follow some good formula, but can also obtain a standard cream. But if patients are poor and cannot bear the expense of definite percentage cream, or if physicians happen to live in the country, there seems to be no very good way of determining what percentage of fats the cream possesses, unless the physician makes his own analysis. I call attention to the fact that we can buy one of the Babcock centrifuges for only \$5.00, and it is a very simple matter for any physician in country or city to test the amount of fat in the cream. Then, having a good amount of fat in the cream, it is comparatively easy to compare the percentage of fat with the specific gravity of the milk, and thus to discover whether we have a high or low percentage of albuminoids. If we have milk which is under good control, and comes from a good dairy, we may assume that the proteids are fairly normal. If we have once established the amount of fats and proteids, we can go on a formula of our own in determining what proportion of milk or cream we shall use, or can follow the excellent plan proposed by Dr. Westcott.

Dr. WESTCOTT.—As I said in the course of the paper, unvarying accuracy can be expected only with milk of a definite analysis, such as is furnished by the Walker-Gordon Laboratory. At the same time, even with the ordinary run of fairly good milk and cream, the method that I have proposed enables us to effect combinations with a much clearer idea of results than before possible in the mixtures that we have learned to give children of various ages, a tablespoonful of cream, so many ounces of milk, so many ounces of water, and a teaspoonful of sugar of milk to the bottle. I must confess I never could arrive at any definite idea of what I was giving in a mixture formulated in that way. In using ordinary milk and cream it would conduce greatly to accuracy to have several analyses of both made, afterward using the averages. After all, relative values are more important than absolute values at the outset. If the first combination agrees well with the infants the strengths of the fat and proteids can be increased by increasing the quantity of milk, without changing the total quantity of the mixture. It is a method that has served me in

very good stead. In many cases of weak digestion in children, for whom I thought it highly important to have the accurate percentage values, as found in the laboratory modified milk, the cost would perhaps become burdensome, and I was compelled to give up altogether, or go back to some of the empiric methods of feeding, or to endeavor to imitate as nearly as possible the percentages that I had already been using. This method has been gradually elaborated, and I have found it very satisfactory in my practice. I believe it offers decided advantages over other plans for approximate modification when the laboratory mixture cannot be employed. Certainly for a child that has been fed on a percentage mixture it offers the most satisfactory means of changing to an ordinary home combination.

Scurvy.—Dr. ALFRED HAND, Jr., reported a case of scurvy in a child of 8 months, the diet having been boiled milk and water from birth. Evidences of rachitis existed in the shape of the head, the rosary, the enlarged epiphyses, and the absence of teeth. For three weeks the child had been sleepless, and handling it, the legs especially, seemed to cause pain. There were present epistaxis, a petechial eruption on the abdomen and legs, and painful enlargements of the tibial heads. The striking features of the case were the absence of any sponginess of the gums (probably because there were no teeth) and the complete cure of the case on antiscorbutic diet.

D. L. EDSALL, Recorder.



ABSTRACTS.

CYANIDE OF MERCURY IN DIPHTHERIA.

LUDDECKENS-LIEGNITZ (*Aerztlich Rundschau*, 1896, vi, 773) has used this preparation for a number of years in diphtheria. Scarlet fever, even when diphtheria is absent, is also treated by him with cyanide of mercury, and good results obtained.

The treatment is as follows: Externally—Moist cold compresses are to be applied to the neck every two hours, covered by woolen cloths, or frequently renewed hot compresses over the larynx; and, if necessary, packs and baths. Locally—One to three times daily, after scraping off of necrotic deposits, the pharynx is swabbed with liquor ferri sesquichloride. If necessary, the mucous membrane may be anesthetized by the application of ten drops of a 3 per cent. solution of cocaine. (This should always be omitted in small and weakly children.) As soon as the borders of the diphtheritic patches show a decided tendency to heal, they should be touched with the liquor ferri sesquichloride, diluted with equal parts of water. If possible, a gargle of chlorate of potassium, a teaspoonful to a goblet of water, should be used, or the mouth frequently swabbed out with this solution. Internally—The juice of one or two lemons in sweetened water, bland food, the best being milk, and a mixture of cyanide of mercury is given every hour. The dose is to be regulated according to the individual; the usual dose is one teaspoonful of a 1 to 10,000 solution. Under this treatment he claims that diphtheria is cured in 5 to 8 days, and scarlet fever in 8 to 10 days. The author obtained with this treatment the following results: Of 81 cases of diphtheria and 30 of scarlet fever, only one of each died. The child who died of diphtheria had been greatly debilitated by a previous attack of vomiting and diarrhea, and the one who died of scarlet fever suffered from scorbutic and intestinal hemorrhages. No bacterial examinations were made in these cases, but children taken with the same disease, in the same house and family, and received different treatment, showed the usual mortality found in true diphtheria. Only in one single case did nephritis occur, and this was the only one treated in addition with antitoxic serum. The case was that of a three year old child, suffering from well marked croup and soggy grayish yellow deposits in the pharynx. On the next morning an injection of Behring's Serum No. i was made; in the afternoon tracheotomy was performed, on account of symptoms of suffocation; the next morning, although much improved, another dose of Serum No. iii was injected, because the lungs were greatly affected. Eight days after the commencement of treatment, nephritis set in. The treatment described above had been continued in the meanwhile. The child recovered.

PNEUMOTHORAX COMPLICATING A TUBERCULOUS BRONCHOPNEUMONIA.

A. JOSIAS (*Rev. mensuelle des maladies de l'enfance*, 1896, *xiv*, 139) says that pneumothorax in a child is of the greatest rarity. Tuberculosis here, as well as in the adult, is the initial factor in the greater number of cases; pneumothorax following pneumonia, bronchopneumonia, or abscess of the lung, is found relatively seldom in children; children up to the age of five years are more frequently subject to this affection than those from five to ten years of age; usually the perforation is found at the base, as the tubercular process has a predilection in children for the lower portion of the lung; left-sided pneumothorax is met with most frequently in children, as also in adults. The diagnosis of this complication is very difficult, and the following case had also been looked upon as one of pneumonia. The patient was a girl, five years of age, who had lost two sisters from meningitis. She had suffered for one week with fever, delirium, cough, anorexia, and constipation. On admission, cyanosis and dyspnea, slight dullness over the left apex, within the region of the middle and lower portion of the left lung, and bronchial breathing were present, small rhonchi were heard, the pulse was frequent and small, high fever, and traces of albumin in the urine were also observed. During the following ten days emaciation was rapid and debility increased. The lungs were found in the same condition as before, with the exception that a splashing sound was occasionally heard, after a severe coughing spell, below and behind on the left side; very soon after metallic respiration was plainly noticed. Death occurred with continued increasing dyspnea. Section revealed two cavities of the size of walnuts in the lower portion of the left lung, which communicated with each other and with the pleural cavity—an open pneumothorax.

INTRAUTERINE ORIGIN OF PARESIS OF THE ARM.

PLACZEK (*Berl. Klin. Wochenschr.*, 1896, *xxxiii*, 915). Cases of monoplegia brachialis of central origin, whether of intrauterine origin or acquired later during the first years of life, are in their pure form rarely met with. The author describes a case brought to him by a midwife in which the intrauterine origin of the paralysis seemed established from the history of the case. The child was the sixth one borne by the mother. It was delivered in a few hours spontaneously and without interference. As soon as it was born the paralysis of the right arm was discovered. At the present time even, at six weeks of age, every spontaneous movement of the right arm and forearm is absent. If it is lifted passively, the extremity will fall again in a flaccid condition. The hand is

soft and strongly flexed to the ulnar side; the fingers, which are slightly movable, are bent at an acute angle in the metacarpophalangeal joint, and extended at the phalangeal joint. A resistance is felt as soon as an attempt is made to open the hand or to flex it towards the dorsal surface. During gestation the mother had been thrown down a flight of fifteen steps by a treacherous assault from behind. A brother of the patient, fourteen years old, presents the typical picture of cerebral infantile paralysis, combined with marked idiocy. These two facts are the main reasons which have led the author to make the diagnosis of monoplegia brachialis of intrauterine origin.

THE PATHOLOGY OF THE THYMUS GLAND.

ERNST SIEGEL (*Berl. Klin. Wochenschr.*, 1896, xxxiii, 887). The symptomatology which has been given the name of thymus asthma has a peculiar history. It has been long recognized by older authors. Kopp is usually mentioned as the first writer in 1830 on this subject, but according to Friedleben this affection was observed much earlier, in 1712 by Plater and later by Budaeus, John Clark, Hamilton and others.

It is undoubtedly true that enlargement of the thymus gland has for a long time been recognized as the cause of dyspnea, and has been made especially responsible for laryngismus stridulus in children.

In all cases heretofore reported the enlarged thymus gland was found post mortem, and was then looked upon as the cause of dyspnea during life, but this case is the first one which was diagnosed during life and which was treated in consequence by the removal of the gland with subsequent cure.

The author believes that this case, which has been closely observed in its clinical symptoms, will throw more light on the question of thymic asthma than all one-sided pathologico-anatomical studies. The reason of the great divergence of opinion in relation to the former is to be found above all in the absence of unanimous views regarding the physiological conditions of the thymus gland, i. e., of its normal size and the time of its total disappearance. Hyrtl, for example, writes: "The thymus gland, in its full development, only exists in the embryo and in early childhood. About the time of puberty it has either completely disappeared or is reduced to an insignificant remnant, which may not disappear during the rest of lifetime." Altogether differently does Friedleben, who is to be reckoned among one of the best authorities on the thymus gland, describe the laws of its growth: "From its first appearance in the embryo to the twenty-fifth year of age the thymus gland continues to increase in length. This increase is greater after the ninth month of life than in the embryonal period

and during the first period of life. After twenty-five years of age a decrease takes place in its length, which (as a rule) progresses onward to the total disappearance of the organ, or after its fatty degeneration gives place again to an increase in its size, from the accumulation of more fatty layers." The following is the history of the author's case, which is presented as the first cure of thymic asthma due to hyperplasia of the gland:

H. S. was aged two and a half years. Four or five weeks ago it was first noticed that the child began to breathe audibly and to pant, and a rattling noise was made as though mucus had gathered in its throat. External applications, as well as powders and medicines, did not improve the breathing. The dyspnea was continuous, but with occasional exacerbations. On February 26, 1896, the child was brought to the hospital and a diagnosis of laryngismus stridulus was made by Prof. M. Schmidt. Tracheotomy was performed on account of the extreme dyspnea, but the relief was not as great as had been expected. Respiration remained rapid and labored, while the aspect remained livid and anxious. All attempts to remove any probably deep situated membranes through the canula were futile and only a small quantity of glairy mucus was discharged through the canula. The temperature now began to rise to 40° C., the pulse became very small and rapid, so that it was necessary to administer camphor hypodermically. The cause of this change was a severe attack of bronchitis, with numerous râles and viscid expectoration. After its cessation the dyspneic symptoms were much milder for a number of days, and the child notably improved.

The expectoration contained no diphtheria bacilli, but consisted of fibrin and white blood corpuscles. Very soon, however, the old symptom complex of stenotic dyspnea again made its appearance. A long canula reaching down to the bifurcation of the trachea was now introduced; the child began to breathe perfectly easy, and improved somewhat during the following four weeks. On removal of the canula severe dyspnea would always recur. By this time the long canula had caused decubitus, accompanied by blood-tinged expectoration and an extending bronchitis. A shorter canula had therefore to be substituted for the long one, and the boy became again the subject of repeated short attacks of suffocation of a peculiar nature. He became blue, anxious, with jactitations of the extremities, sucked in the air with a hissing sound, threw himself about, and according to the experienced nurse was threatened with death in each attack. In the differential diagnosis the cause of compression, which was situated deep down in the trachea or the bronchi, perhaps an enlarged mediastinal lymphatic gland, or a carcinoma or sarcoma had to be considered. Dr. Rehn suggested a possible

hyperplasia of the thymus gland, which was known to have occasioned sudden suffocation and death. As the presence of the former causes would undoubtedly have doomed the child to death, and on the other hand a confirmation of the diagnosis of hyperplasia of the thymus gave some hope of success, Dr. Rehn undertook the operation. When the anterior mediastinal space was opened from above, a portion of the thymus gland of the size of a hazel nut, of a whitish-gray color, was seen to protrude with every inspiration and again retract with each expiration. The thymus gland was fastened by three sutures to the fascia over the sternum. On May 27th the patient was dismissed cured.* Not a vestige of dyspnea was present. The author does not look upon asthma thymicum and laryngismus stridulus as identical diseases as was formerly done, but believes that the effect of an enlarged thymus is usually different from that of laryngismus. Above all, the manner of drawing in the breath was altogether different from that in stridor. The manner in which an enlarged thymus produces dyspnea is still an unsolved question. A number of authors attribute the whole symptom-complexus to pressure on the vessels, the pulmonary artery, vena cava superior, aorta, or on the heart itself. Others assume that the respiratory nerve tracts—the recurrent vagus or the vagus itself—are injured from pressure paresis or from stimulation causing reflex action. Two cases of thymic asthma reported by Grawitz may be mentioned. The first was that of a child eight months old, found dead in bed one morning. No cause of death could be found, only the presence of a hyperplasia of the thymus. This case confirms the importance of the thymus question, from a medico-legal aspect, for a servant girl was here accused by the parents of the child of negligently causing its death by suffocation, through covering its mouth with the feather quilt.

The second case, reported by Grawitz, was that of a six-months-old child, who was suddenly attacked in full health by dyspnea, to which it succumbed in a few minutes. Section in this case did not disclose any cause of death, except an enlarged thymus. The sudden appearance of dyspnea, and death following the first attack, are remarkable in this case.

EXPERIENCE IN THE BLOODLESS REDUCTION OF CON- GENITAL LUXATION OF THE HIP.

MIKULICZ (*Centralbl. für Kinderheilkund*, 1896, i, 304) claims that his method practically consisted in fixing the luxated leg, by means of a bed-apparatus, in the position of extension, abduction and outward rotation. In this position the luxated head of the thighbone is gradually forced to the edge of the acetabulum, and as soon as the existing antagonizing power is removed, is repositied. The children spend eight to

ten hours daily in the apparatus, remaining and sleeping in it the greater part of the night. During the rest of the time they move around freely. In children up to the end of the second year of life the apparatus alone is usually sufficient to effect a perfect cure, and the author presented three children of the ages of four to four and a half years who had been treated for unilateral luxations, with extraordinarily good results; their walk is absolutely normal, not the slightest asymmetry indicates the side of the former affection, the head of the femur is firmly placed in the acetabulum, the joint is movable in a normal radius, and even a minute examination fails to discover a difference between the right and the left side. The children came under observation at the ages of four, thirteen, and twenty-four months; the duration of treatment was 8 to 12 months. In older children who have already accustomed themselves to the waddling gait, orthopedic treatment will have to be combined with the bed-apparatus. The swaying of the pelvis and the body are obviated by a light jacket of felt, reaching to the trochanters; the atrophic gluteal muscles, whose function in walking is frequently altogether lost, are strengthened by massage and gymnastic exercises. The existing shortening of the leg is not to be treated in the beginning, as long as the head of the bone is not yet with certainty fixed; under certain circumstances it is even increased by increasing the height of the heel on the round side, to force the affected leg during walking into the position of abduction; for in this position the head of the femur is more certainly fixed, where the acetabulum is insufficiently developed, than in an indifferent position of extension. It goes without saying that the duration of treatment in older children presenting secondary, principally functional changes, is longer than in younger ones, who have not yet learned to walk at all, or only very little. The head may also be firmly fixed in the acetabulum in an indifferent position of extension, and in spite of this the children will walk lame, according to their former habit. In this case the apparatus may be dispensed with, but orthopedic treatment must be continued for 1 to 2 years longer.

He has treated 18 cases of unilateral luxation successfully. In 8 cases perfectly normal results were obtained, as in the cases exhibited; the children came under treatment at the ages of 4 months to 4½ years. In 10 cases the head of the femur remained firmly fixed in the acetabulum, that is, an anatomical, but not as yet a perfect functional cure was effected; the children's walk is much better than formerly, the gait in the clothed child showing hardly any abnormality, but in the naked child an expert will at once discover the remnant of the lateral swaying of the pelvis, which had become habitual. He feels convinced that in these children a perfect result will be obtained in time. These patients were two to

five and a half years old in the beginning of treatment; the duration of treatment was from four months to two years. In bilateral luxation he was not able a year ago to report good results. In the unilateral luxations there is never developed, at least not during the first years of life, a very high degree of incline of the pelvis and lordosis, as the pelvis is sufficiently supported by the sound hip-joint. Consequently, the inclination towards a relaxation of the once reduced head of the bone will be very small in the affected joint. By its weight the reduced head of the femur is gradually forced deeper in the acetabulum, and in this manner definite fixation is accomplished. In bilateral luxation, however, the pelvis in standing and walking is strongly tipped forward, the visible result being the notable lordosis of the hip and the protrusion of the nates. From this position of the pelvis the reduced heads of the thighbones are shoved out of the acetabulum and crowded upward. Mikulicz has therefore constructed a peculiar jacket, which, by the help of a symphysiæ girdle, antagonizes this pelvic displacement. With the help of this he has in three cases of bilateral luxation accomplished the retention of the previously reduced heads of the thighbone by means of the bed-apparatus. He, for example, exhibited a girl three and a half years old, in whom, after ten months' treatment, the heads of the thighbones are firmly fixed in the acetabula; the child was allowed as much freedom of motion since the beginning of treatment as the patients with unilateral luxations. Finally, he refers to an error in regard to his apparatus, which was held by Lorenz. Lorenz criticised the outward rotation as being directly harmful, as the neck of the femur in the congenital luxations was strongly anteverted, and consequently the head was already situated towards the front; by rotation outward a transposition might at the best be attained, but never a reduction of the head of the bone into the acetabulum, which could only be accomplished by an *inward* rotation. He replies to this that the head of the bone was in nowise displaced by the anteversion, but only the trochanter was always dislocated and strongly crowded backwards. The anteversion of the neck, therefore, had no influence on the position of the head of the thighbone. He did not at all intend to push the head into the acetabulum by the outward rotation; its object was to gradually stretch, by the crowding forward of the head, that part of the capsule of the joint which covers the empty acetabulum as a contracted, firm mass of tissue, and obstructed the way to the head.

MULTIPLE PAPILLOMA OF THE LARYNX IN A CHILD.— LARYNGOFISSURE.

NAVRATIL. (*Pester-med. chir. Presse*, 1896, xxxvii, 1216) reports the case of a patient, a girl 5 years of age. She was

anemic though fairly well nourished, breathing was stentorian, and a diffuse catarrh was present in both lungs. After a few days' practice he was able to see in the larynx a tumor of the size and shape of a raspberry, which originated below the right vocal cord. The restlessness of the child and the size of the tumor, which occupied the whole lumen of the larynx, made a careful examination impossible. After a number of observations it was determined that the tumor was forced up from the lower part of the larynx on coughing and with expiration, thus rendering it probable that it had a pedicle. On account of progressive stenosis, a low tracheotomy was performed in August, and on September 17th, when the bronchitis had diminished and the child was somewhat stronger, laryngofissure was performed. The incision was made from the median line of the larynx to the cricoid cartilage, as only through this wide opening was it possible to remove the tumor, which consisted of three papillomata. The operation was well borne by the patient. Healing took place by primary union. The canula was removed in October, after it was thought that no recurrence would take place. The patient left the hospital with a fairly clear voice. In this case he departed from his usual treatment of children by removing the papilloma through the mouth after a previous tracheotomy. He had been forced to do a laryngofissure on account of the seat of the papilloma in the lower space of the larynx, for it was impossible to remove it thoroughly from this position through the mouth.

CONGENITAL CEREBRAL DIPLEGIA IN AN INFANT FROM AN EXTRAUTERINE PREGNANCY.

JUL. GROSZ (*Pester-med. chr. Presse*, 1896, xxxii, 1166), in view of the scarcity of any reports relating to infants from extrauterine pregnancies, believes this one to be of much interest, as he was able to observe nearly from the moment of birth up to its death, a few months later, a congenital cerebral diplegia, the histological findings corresponding with the symptoms observed during life. The child was delivered by means of a laparotomy on September 10th, 1895. The baby held its head continually towards the right shoulder. The left sternocleidomastoid muscle was markedly cord-like and prominent, whilst the muscle could hardly be felt on the right side; the trapezius of the right side, however, was strongly contracted. If the head was turned from this position towards the left side and then released, it would spring back to its first position. The right upper extremity was nearly flexed to an acute angle, at the elbow-joint. The forearm could be slightly moved from its position. The muscles were in a condition of hypertonicity. The forearm was pronated, the hand at the wrist-joint was flexed inward and somewhat

towards the ulnar side; the fingers were flexed at the metacarpophalangeal joint, so as to cover the thumb. The right upper extremity had only slight motility. The left upper extremity could be easily moved by the child. The lower extremities seemed to be continually crossed, so that the left leg covers the right. Motility of the left lower extremity was undisturbed; when crying the child kicked with the left leg, flexing and then again extending it, although the right leg remained nearly motionless, always somewhat flexed at the knee-joint and rotated inward. Extension of the lower extremity from this position was impossible on account of the tonicity of the muscles. This hypertonicity of the muscles affected the adductors and the flexors; the spasmodic condition of the latter caused a marked "equino-varus" position of the right foot. The patellar reflexes were not increased, as far as could be determined. The general condition of the child otherwise was satisfactory. There was no fever. The child was fed on sterilized milk, and seemed to bear it well. For two months longer the infant was observed at the clinic, during which time it developed remarkably slowly, the increase in weight being hardly half a kilogramme. The following changes in the nervous system were observed: about the eighth to the tenth day of observation athetoid movements of the right hand were noted, which were, however, only temporary and barely lasted a few seconds. These athetoid movements of the fingers consisted of the well-known, slow, rhythmic movements following each other, in which the fingers are now flexed, now extended. The motility of the arm, however, gradually returned, and at the same time the athetosis of the fingers increased notably. The athetoid movements were most marked when the child brought the hand near its mouth. The facial paralysis remained stationary during the whole time. While the motility of the right upper extremity visibly returned in the two months of observation, that of the left upper extremity disappeared more and more, and gradually a hypertonicity of the muscles of the forearm was established, from which the forearm took on a flexed position. At the same time athetoid movements were noticed in the fingers of the left hand. On December 14th the child grew worse, an intestinal catarrh appeared, following which symptoms of atrophy gradually developed. The child died January 9th.

Resumé of the autopsy: Cerebral compression of the right side as a result of the intra-abdominal pressure; of the left side from the accompanying subdural hemorrhage. The right cerebellar hemisphere was also compressed and only partly developed, a secondary degeneration of the left corticomuscular tract, which may be traced to the bridge, was also present. The associate fibers of the cerebral hemispheres were

stunted in their development, as also were the crura cerebelli ad cerebrum and the two corticomotor tracts; among the latter the right pyramidal tract of the spinal column also was less developed. The whole of the right half of the spinal cord was less developed than the left.

Taking into consideration all we know on the one hand from the observation of the infant, and on the other from the histological findings, the following may be added as an explanation of the symptoms: The described paresis of the right facia'is, of the right sternocleidomastoid and the extremities of the right side, as also the contraction of the flexors of the head and all the other symptoms of hypertonicity appearing later, may be referred to a continued irritation in the left hemisphere (hemorrhage) which symptoms were bound to appear even without the demonstrated hypogenesis of the pyramidal tract as the result of the cortical changes. These were the conditions in the beginning of the period of observation, when the child was presented to the society suffering from this right spastic hemiplegia. During the further period of observation, hypertonicity and contracture of the left extremities developed, the explanation being found in the compression of the right hemisphere; of course it may be possible that an irritation coming from the left hemisphere through the fibers of the corpus callosum may also have exerted some influence, so that the spastic paralysis of the left extremities was added to the hemiplegia of the right side.

This case can have been only one of two types of cerebral diplegia: either it was a case of Little's disease, or we have to deal with a bilateral hemiplegia, in which the main symptom was a general stiffening, which involved all the extremities and in which the hypertonicity of the muscles was more marked than the paralysis. Furthermore, it is characteristic of Little's disease that the upper extremities are less affected than the lower. On the other hand, in the symptomatology of bilateral hemiplegias, the paralysis seems to be the all-per-vading symptom of the disease, which may also, at the same time, be joined to spasms of the muscles. This we call a bilateral spastic paralysis.

THE TREATMENT OF PROLAPSE OF THE ANUS IN CHILDREN.

F. SCHMEY (*Centralbl. f. Kinderheilk.*, 1897, ii, 41) says that prolapse of the anus in childhood is quite a severe and dangerous affection, for the reason that large hemorrhages frequently occur from the prolapsed mucous membrane, which is usually in a condition of venous stasis. This tends to debilitate the child.

In one of Schmey's cases the rectum prolapsed not only during each stool, but even when the child urinated, and lat-

terly seemingly without any cause whatever. In addition there was much bleeding of the prolapsed mucous membrane, visibly reducing the patient's strength. Prolapse of the rectum is usually found in quite young, badly nourished children. The author claims to have found marked symptoms of rachitis in all children treated by him for prolapse of the anus, and has directed his treatment accordingly. Up to the present time the usual treatment consisted in surgical measures, in the application of a bandage, the excision of spindle-shaped strips of the folds of skin which converge in radiating lines to the anal orifice, or a cauterization of the skin surrounding the anus with the hot iron. Others advocated the subcutaneous injections of strychnine in the neighborhood of the anus, chemical cauterization or the ligature, and excision with narrowing of the anus. The greater number of these measures are not safe; for example, numerous cases of death, due to pyemia, have occurred following cauterization of prolapse of the rectum.

Relying on the observation that all children with prolapse of the anus presented distinct signs of rachitis, Schmey put them on anti-rachitic treatment, and in this way claimed to have attained exceptionally brilliant results.

His formula is the usual one for the exhibition of phosphorus:

R Phosphori, 0.01;

Ol. jecoris aselli, 100.0.

Ft. Sol.—Sig. One to three coffee-spoonfuls daily.

Generally the prolapse was perfectly cured after the use of one bottle of this medicine, and did not appear again. He offers the following resume: Prolapse of the anus in children, according to my observations, is a symptom and a sequel of rachitis, and its cure is easily and permanently accomplished by the administration of oil of phosphorus.

PRACTICAL NOTES.

The Treatment of Whooping-Cough.—Naegeli-Akerblom (*Centralbl. f. Kinderheilk.*, 1897, ii, 43) calls attention to an old and nearly obsolete remedy for whooping-cough, namely, coccionella, which in 1853 was designated by Oesterlein as a harmless resurrected remedy. He treated about eighty cases with this drug with excellent results; the disease disappeared totally within six to eight days.

The following was the formula:

R	Coccionellæ subt. pulv.....	0.05 to 0.20
	Ammonii carbonici.....	1.0 to 2.0
	Syrup aurant.....	20.0
	Aq. destillatæ, q. s. ad.....	100.0

Shake.—A teaspoonful every two hours.

The mixture is undoubtedly more agreeable to children than quinine or antipyrine. Ammonium carbonate alone exerted no remedial influence on whooping-cough; coccionella on the other hand was exhibited successfully. In cases of bronchial asthma of adults, where all other remedies failed, it was found useful.

Schleich's Infiltration Anesthesia.—(*Weak solution for use in children.*)

R	Cocain hydrochlor.....	0.01
	Morph. hydrochlor.....	0.005
	Aquæ destill.....	100.0
	Sodii chlor	0.2

M- Ft. Sol.

Worms.—

R	Naphthal. puriss.....	0.1 to 0.2.
	Sacchari albi.....	0.5

M. Ft. Pulv. No. I (1). Sig.—One powder every three hours in sweetened water.—RABON-BOURGET.

Syphilitic Impetigo.—

Hydrarg. oxid. rubr.,	
Zinci oxid.	ââ 1.5
Resorcin	0.6
Vaselin	30.0

M. Ft. ungt. Sig.—For external use.—PHILLIPS.

For Whooping-cough.—

℞ Bromoformii.	1.75
Tinct. aconiti.	1.0
Tinct. strychni.	
Tinct. grindel. rob.	ââ 0.75
Tinct. bryoniæ.	0.5
Syr. opiat.	50.0
Syr. cort aurant.	105.0
Spirit (90%)	25.0

M. Sig.—A teaspoon to a tablespoonful, according to age, to be taken daily (may be diluted with water).—*La Med. moderne.*

For Difficult Dentition.—

℞ Sodii brom.	0.5
Ag. flor. aurant.	
Syr. æth.	ââ 30.0
Aquæ destill.	120.0

Sig.—For external application. To be lightly rubbed on the gums of the infant, after nursing, several times daily.—*Sem. med.*

For Laryngismus Stridulus.—

℞ Potass. citr.	7.0
Pulv. ipecac.	15.0
Laud. Sydenham.	9th xx
Syr. simpl.	15.0
Aquæ destill.	150.0

M. Sig.—A coffeespoonful every hour for older children.—*Med. chir. Centralblatt.*

Intestinal Bacteria—The microbes which are found in the intestines of the new-born, according to Szego, do not correspond either with those of the ducts of the breast gland or of the atmosphere of the room, or with those found in the water used for the bath, factors which, although frequently ac-

cused, are not able to exert any deleterious influence; their source has not been determined, but the door of entrance probably is through the large intestine.—*Arch. f. Kinderheilk.*

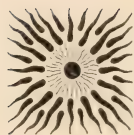
Diabetes.—Three cases of diabetes mellitus, a rare disease during childhood, are reported. WILSON reports the case of a four-year-old male who had been healthy until a few weeks before, when he began to lose flesh and suffer from nocturnal incontinence of urine. Erosions of the prepuce appeared, but no phimosis was present. A week later there was emaciation extreme and the child was greatly debilitated. Appetite remained good, but there was great thirst and involuntary and continuous passages of the feces. The urine was sp. gr. 1035, and contained one and a quarter per cent. of sugar. On the following day there was deep coma and death. SCHALENKAMP's case took an even more rapid course. A girl, twelve years of age, complained only of pain in the abdomen, was exceedingly thin and weak, had no fever, eat and drank copiously. The lips were dry, tongue heavily coated, the quantity of urine passed in twenty-four hours about three liters, containing four per cent. of sugar. She died in long-continued coma. The third case, reported by STERLING, was complicated with disease of the kidneys. There was edema, and, towards the end, with uremic symptoms, at the same time presenting similar symptoms as the previous patients. The teeth of this eight-year-old child rapidly became carious; the urine contained six per cent. of sugar. In neither of these cases had an early diagnosis been made, and the author very properly points out that the accompanying complications may obscure the diagnosis.

Opium Poisoning.—DOERNBERGER narrates a case of acute opium poisoning, from the use of a proprietary tea, as a protest against the legalized sale of these preparations, and an instructive lesson to the public at large. He thinks we should give a large dose of the antidote, atropine, and says we may give as high as one-half a milligramme.—*Munch. Med. Wochenschr.*

Paralysis following Mumps.—REVILLOD observed the appearance of paralysis in a boy seven years of age, after an attack of mumps, in which he could exclude infantile and post-diphtheritic paralysis. The paralysis attacked at first both lower, then upper extremities, and later involved the left

facial area, the muscles of deglutition, the lingual and respiratory muscles. The sphincters and sensation remained normal. A perfect recovery took place in six weeks under proper therapeutic measures.—*Rev. méd. de la Suisse Rom.*

Laparotomy for Ovarian Tumor.—Laparotomy was performed by JOHNSON on a girl five years of age for the following symptoms: Violent abdominal pain, vomiting and diarrhea. He found an ovarian tumor, in which the pedicle was twisted twice around its axis. The tumor was extirpated, and the patient recovered.—*La sem. méd.*



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ORIGINAL ARTICLES.

RACHITIS.*

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RACHITIS is a subject of perennial interest. Its importance is somewhat overshadowed by appendicitis, abdominal hysterectomy, antitoxin, etc.; yet it deserves more consideration than is bestowed upon it, for its vital connection with the development of the child, both mentally and physically.

The etiology of rachitis is a much mooted point. We know that bad hygiene and lack of fresh air, sunlight and exercise are prominent factors in its causation, but that they are the only causes is negatived by its prevalence among the negro population, who have plenty of sunlight and air, at least in this section of the country. However, the consensus of opinion is narrowing down to the conclusion that improper food and bad hygiene will produce rachitis. Lack of fat in the food seems to explain the beginning of rachitis better than any other hypothesis. Numerous experiments upon the lower animals under various conditions of hygiene and foods have been made. Apparently the absence of fat was felt more than that of any other ingredient of the food. In children fed upon milk deficient in fat, condensed milk and the Lie-

* Read before the Louisville Clinical Society.

big's foods—rachitis is very apt to develop. It is frequently seen in children at the breast, if the mothers are in very poor health, or if the infants are nursed only at night, the mother being at work during the day, and given during the day cow's milk, which is often deficient both in fat and proteids. That the food has a very intimate connection with the development of rachitis is indicated by the age at which rachitis is liable to arise, namely from the sixth month to the end of the second year. This is the time in which the breast milk becomes poor in quality, the child is weaned and is fed a mixed diet which its digestive organs are totally unable to properly assimilate. During this period the child usually gets very little milk. Experiments seem to show that the young of any animal will develop rachitis, however varied the diet, if it is deficient in milk.

The belief that rachitis is due to a diminished amount of lime in the body is probably a mistake in taking the effect for the cause, and the lactic acid theory is confessedly untenable. The fact that infants raised on condensed milk or the various brands of prepared foods are sometimes quite fat does not negative the theory that the lack of fat is the exciting cause of rachitis. Although the body can manufacture fat from the sugars or from proteids, it is probably not normal fat, for when one of these fat children is taken sick, it is marvelous how rapidly the fat disappears.

The early symptoms of rachitis are not pathognomonic, but restlessness at night, a disinclination to play, constipation and head sweating furnish very strong evidence of the presence of this trouble. The earliest symptoms that can be ascribed with certainty to rachitis are beading of the ribs and craniotabes. Head sweating may be found only along the line of hair on the forehead or it may be so profuse as to wet the pillow, in which case it adds to the liability to catarrhal troubles. Beading of the ribs is first noticed upon the fourth or fifth on the left side, but rapidly extends to the other ribs and in advanced cases presents the rachitic rosary.

Craniotabes is a spot of softening of bone upon the posterior portion of the skull. It gives the same sensation under the finger as parchment. It is of importance from the intimate relation it bears to the nervous symptoms of rachitis,



FIG. 1. RACHITIC ROSARY.

although it is more often found in cases suffering from both syphilis and rachitis than in pure rachitic cases.

After the rachitic rosary the more common bone lesions are thickening at the wrist and ankle joints. This is found quite early in the disease and is very marked in advanced



FIG. 2. RACHITIC BOW LEGS. BEFORE OPERATION.

cases. This thickening resembles the osteo-chondritis of hereditary syphilis, but it is more diffuse and, as a rule, more tender. The bone changes attack both the flat and long bones, and represent two different processes. One is the enlargement, vascularization, or inflammation, as one school

terms it, of the epiphyseal cartilage, as shown in the beaded ribs and enlarged wrist and ankle joint. The other affects the shaft of the bone, the outer layers are thickened and softened, and the inner become more and more dense as they approach the medullary canal, which often is highly vascular. The



FIG. 3. RACHITIC BOW LEGS. AFTER OSTEOCLASIS.

bone is not deposited under the periosteum as it normally should be, and, therefore, the bones are prone to bend and to green-stick fracture, producing the marked deformity so often seen in the legs and forearms. Subsequently the bones become exceedingly hard and ivory-like. The flat bones undergo

proliferation, so that the natural bosses of the frontal and parietal bones are greatly thickened, giving the head a square shape. At the same time the anterior fontanelle is more patulous, and the region of the superior longitudinal sinus becomes flattened. The anterior fontanelle does not close until after the second year, instead of at the eighteenth month. The outline of the head is polygonal instead of rounded, as is normal, or as is seen in hydrocephalus.

Teething is dependent upon the condition of the health of the child. If rachitis develops early the first teeth are delayed for months, but if rachitis develops late the teeth that would normally appear at this time are delayed or the teeth are cut irregularly, for instance, the canine before the molar. In rachitis, the eruption of the teeth is accompanied by much greater nervous disturbances than are usual in healthy children.

In the large cities the changes in the pelvic bones, resulting from rachitic diminution of the antero-posterior diameter, narrowing of the pubic arch, etc., attract great interest from the obstetrician; fortunately we rarely see such bad effects from the milder rachitis met with in this section.

In addition to the deranged bony system there is a relaxation of the ligaments. The joints are so loose as to allow the extremities to be turned in any direction, and thereby fortunately prevent too early walking. This relaxation, when affecting the spinal vertebræ, furnishes one cause of rachitic kyphosis and rachitic lateral curvature. These deformities in the early stage may be relieved by putting the child in a proper position, but if not prevented they become permanent, for after a time the vertebræ are altered by the continued pressure, and the deformity cannot be entirely relieved.

Even when there is no kyphosis the thorax is often greatly deformed from the softness of the ribs and cartilages. Extreme deformity with pigeon breast is not seen unless there is in addition to the rachitis some obstruction to respiration, as from chronic rhinitis, adenoid growths, etc.

The lack of tone in the muscular system explains the pot belly and the constipation, alternating with diarrhea, from which most of these patients suffer.

Though the bony and muscular lesions are of great moment to the child, the nervous symptoms far outweigh

them in their gravity. The nervous phenomena are convulsions, laryngismus stridulus, tetany, and more rarely, Trousseau's and Chvostek's symptoms, hydrocephalus and nystagmus. Convulsions in children are always alarming and may



FIG. 5. RACHITIC KYPHOSIS.

be due to widely varied causes, but rachitic children respond to nervous reflexes of any kind more violently than other children. The presence of rachitis should therefore be suspected if there does not seem to be other adequate cause for

the nervous explosion. By some it is thought that the tendency to convulsions is due to pressure on the cranio-tabetic spots, but they occur too often and are not limited to children with the spots of softening. They are more probably due to the hyperemia of the brain and nervous system. Cranio-tabes does not explain the laryngismus stridulus or the tetany, both of which are closely related to convulsive seizures. The laryngismus stridulus must be explained by systemic conditions and should not therefore be treated as a local trouble.

The limits of my paper will not allow me to go into the nervous symptoms more fully, though they are well worth more extended discussion. They include many common as well as rare nervous affections, the etiological relation of which to rachitis has only recently been demonstrated. The internal organs do not seem to be affected by rachitis, except the mucous membranes, which are particularly sensitive. The slightest error in diet may start up a gastro-enteritis which will often resist the best medication. But the most dangerous feature is the extreme liability of the bronchial tract to catarrhal inflammations. The profuse sweating of the head and neck keeps the nasal mucous membrane in a condition of congestion, which extends very easily to the bronchial mucous membrane. The lack of resiliency and the softness of the bones of the thorax prevent these patients from coughing up the mucus and pus and micro-organisms, consequently the inflammation tends to extend to the minute bronchioles and to the adjacent alveoli. Under such conditions a bronchopneumonia is so often fatal that a simple bronchitis in one of these children is of the utmost gravity. At the same time the intimate etiological connection between catarrh of the intestinal tract and catarrh of the bronchial tract should not be forgotten.

The diagnosis of rachitis is easy if its prominent signs are kept in mind. These are the head sweating, delayed or irregular dentition, beaded ribs, enlarged joints, relaxed ligaments and pot belly. Occasionally, scurvy is mistaken for rachitis because of the tenderness of the child and the dislike to play. Hemorrhagic gingivitis, purpuric spots and the painful swelling of the shaft of the bones sufficiently differentiate that disease. The loss of muscular tone, together with the extremely mobile joints, simulates central paralysis very

closely, put the absence of contractures and the electric reactions clears up the diagnosis.

The symptoms of syphilis offer no difficulty in its recog-



FIG. 4. RACHITIC KNOCK-KNEES.

nition. The swelling at the epiphysial ends of the bones in syphilis is usually limited to the epiphysial cartilage and feels like a ring. Other swellings are more apt to be towards the

shaft and are not tender on pressure. In rachitis the ends of the bone are enlarged—both the cartilage and the epiphysis—and there is tenderness on pressure.

The prognosis is good if the child is guarded from intercurrent affections. Rachitis by itself is rarely fatal, though as a complication it is much to be dreaded. This tendency to spontaneous recovery invalidates many of the therapeutic suggestions which have been advanced, but there is almost a unanimous agreement as to the value of cod-liver oil.

As to the other remedies there is a marked difference of opinion. Lime and phosphorus both have their advocates. Kassowitz and Jacobi have maintained the advantages of phosphorus. They prescribe it in the officinal oil, or the elixir, giving about 1-250th of a grain or even more after meals. The latest reports, however, seem to show no better results from phosphorus than from many other medications, except when there is present marked nervous restlessness and excitability. Phosphorus is used in many different preparations, but it is probable that in the form of phosphoric acid or the phosphates it does not furnish the therapeutic results of phosphorus itself. The hypophosphites are supposed to exert the same influence that phosphorus does.

Sufficient lime for the use of the body is furnished in the every-day food, milk, etc., and yet its use is advised by most authors, and clinically it seems to be of assistance. Lime water, the phosphate, hypophosphite, chloride, iodobromid, etc., of lime have all been used. It is probable that the hypophosphite of lime is the best preparation.

We cannot rely, however, entirely upon medication. Fresh air and sunlight, proper bathing, and above all proper food must be our main therapeutic agents. The discussion of a dietary for children would require too much of your time. Suffice it to say that especial attention should be devoted to the prevention of gastro-intestinal derangements.

The bony lesions, with the exception of the spinal deformities, tend to correct themselves by the absorption of bone on the convexity from the increased pressure there, and its deposition in the concavity. In later life little evidence is presented of the infantile trouble, save by the spine or the prominent forehead. But the bones are more dense, and therefore less resistant to external forces than is the case

with normally developed people. When the deformity has affected the extremities there will be observed the various forms of bow-legs, knock-knees, etc. These can be relieved best by osteoclasia or osteotomy, although there is no urgent necessity for immediate attention. When the spinal deformities are present, however, such is not the case. These children need careful attention and most skilful treatment. The damage to the respiratory organs from their cramped and crowded condition, the interference with the normal circulation of the blood not only through the lungs but through the whole body, necessitate prompt relief. Gymnastic exercises looking to the straightening of the spine and thorax, and respiratory exercises to increase the vital capacity of the lungs should be inaugurated at once, and if there is not rapid and marked improvement the assistance of a skilled orthopedist should be sought.

The effect of rachitis on the mental and moral development of the child is a subject upon which little as yet has been written. It was thought from the large size of the head that there was an increased amount of brain tissue. If so, rachitis would be a benefit, but the enlargement is probably due to a thickening of the calvarium and not to an increased amount of gray matter. At any rate rachitic children do not, as a rule, in after life exhibit any extraordinary intelligence. What they would have been without the rachitis is a mooted point. That the large numbers of nervous disorders and the hyperemic condition of the brain must have an important influence upon the future of the child, cannot be denied. In these days, when so much is being done in the study of child development, the pathological psychology of this disease can certainly bear more extensive investigation.

REMARKS.

Dr. T. C. EVANS: Dr. Barbour spoke of pigeon breast and obstruction of the nares by chronic rhinitis in connection with rickets. It is not my experience that we have a chronic rhinitis of an obstructive nature in childhood, or in children who are the subjects of rachitis or any other disease. The obstruction that occurs to respiration in childhood is usually due to adenoid growths or enlargement of the faucial tonsils. We do not have obstruction from chronic rhinitis in children; that

is a disease of adult life and not childhood. Those cases where mucus exudes from the nares and hangs down over the lip are likewise due to obstruction in the naso-pharynx and not of the nose proper. This is a mistake which is commonly made, and many cases are treated for catarrh; an attempt is made to relieve the trouble by sprays, etc., when it is really in the naso-pharynx and should be relieved by operative means, and not by local medication.

Dr. J. A. LARRABEE: I think the objection which the essayist made to the lactic acid theory has not been sustained. A more careful inquiry would tend to confirm all and more than has been claimed for it. The earliest change in rachitis is the condition of lactic acid in the small intestine. Other things being equal, a sour baby is a rickety baby. The stools are acid, which not only interferes with the production of bone but also has its effect upon the bone already formed. Every pregnant woman knows that it will cause her teeth to become decayed, and that caries will take place from the acid itself. There is an excess of acid in the intestinal tract, which is proven by the indigestion of bone-making material. The fats cannot be assimilated in that condition.

Rickety children are not anemic, nor do they lack adipose tissue; on the contrary, some of the most rickety children are the fattest babies. The pathological condition does not depend upon a want of material introduced into the system, but there is a failure in its assimilation. There is a great difference between rachitis and starvation. An infant may be extremely emaciated and yet that skeleton will not show a single sign of rachitis.

The study of pediatrics has markedly advanced within the last few years. I have been hammering at the subject of rachitis for the last twenty years, and have often heard the statement that I am crazy on the subject. I am glad that at the present day pediatricists are giving the question the attention it deserves.

I believe that a child who can digest cod-liver oil in the intestinal tract does not have rickets. From our present knowledge of the condition of the intestinal canal in an infant suffering from rachitis, it is not reasonable to suppose that cod-liver oil can be digested. Cod-liver oil by inunction may be indicated, but I believe that any other kind of oil rubbed

into the skin would be as good as the oil of the cod. It does not seem proper to give cod-liver oil in these cases when we know that the acid condition of the intestinal tract will prevent its assimilation.

INTESTINAL CATARRH.—CONVULSIONS.— SUDDEN DEATH.

BY JAMES CARMICHAEL, M.D., F.R.C.P.

Physician Edinburgh Royal Hospital for Sick Children; Clinical Lecturer on Disease in Children in the University of Edinburgh.

GEORGE Vetch, æt. 3 months, a well nourished and formed boy baby, was admitted into hospital on account of "fits." The history showed that until a month ago he was well and thriving. For the first five weeks he had the breast alone. Since then he was fed on the breast and bottle alternately, and has suffered more or less from diarrhea since the change of feeding.

Three weeks before admission he had a general convulsion which lasted about an hour. Two weeks after this a second fit occurred, and a third one came on the morning he was admitted to hospital. The mother was a healthy woman, the father reported to be phthisical; other three children had died, one from pneumonia.

On admission he was found to be a well nourished, lively and healthy looking child. No abnormality was noted on inspection but a slight umbilical protrusion; the anterior fontanelle was normal. *Nervous System.*—The cry was natural. Skin and muscle reflexes more active than normal. Has had several fits lasting a few minutes since admission. The fit begins with a cry, the voluntary muscles generally being thrown into a state of tonic rigidity with very slight clonic spasm, especially of facial muscles. The last fit differed from the previous ones, the spasms, especially of the lower limbs, being of a more clonic nature, the movements of his legs being strikingly like those of a wounded rabbit before death. The pupils are equally dilated during the fit, with some lateral deviation of the eyeballs. There is complete unconsciousness during the fits, which continue from two to ten minutes. Consciousness returns very soon after the fit. No vomiting. *Di-*

gestive system showed the tongue to be clean, but redder than natural. The mucous surface of mouth and fauces was healthy. The stools were frequent, loose and green, with excess of mucus and undigested food. The belly was slightly distended and tympanitic.

Circulation and respiratory systems were normal.

Urinary System. No sample of urine could be obtained.

Temperature only slightly above normal till the day of death, when it rose to 106°.

Progress of Case.—There were no more fits after the day of admission. The child was fed on equal parts of barley water and milk, with milk sugar, sterilized. Salol gr. i and bismuth carbonate gr. iii every three hours, a wet compress being applied to the belly. He continued to improve and took his food well, his stools becoming more natural. He was considered to be convalescing satisfactorily, when on the tenth day after admission his temperature rose rapidly, and the following day he died. The most careful examination did not reveal the existence of pneumonia or any other cause of death.

Post Mortem Examination.—Rigor mortis was only present in the lower limbs; no lividity. *Heart* normal; no coagulation. *Lungs* appeared quite healthy, but on section there was slight catarrh of the larger bronchi at the bases of both lungs; no pneumonia. *Kidneys* normal. *Intestines*—no tubercle was found. In the small intestine the solitary glands were enlarged and pale. Large intestine showed nothing abnormal.

Examination of brain was not permitted.

Since transcribing these short notes from my case book I have perused, in one of the May numbers of PEDIATRICS, Dr. Milton Miller's paper on Hyperpyrexia in Entero-colitis. My observations for several years have led me to conclude that septic auto-infection in these cases is a not infrequent cause of a somewhat sudden fatal termination, as it probably was in this case. It is, I think, incumbent on the physician to keep this steadily in view in the treatment of this disease.

The leading principles that should guide us in the management of these cases is elimination and antisepsis. It is absolutely necessary at intervals to clean the bowel from all noxious material by castor oil or calomel, and in colitis by ir-

rigation. Unfortunately in the majority of cases of diarrhea the small intestine is the affected part which is beyond the reach of irrigants. We must, therefore, trust to careful feeding and the administration of eliminants and antiseptics, such as salol, bismuth salicylate, beta naphthol, and such like remedies.

There can be no doubt that the immediate cause of death in the case I have related was Hyperpyrexia, and this the result of rapid septic auto-infection. The case is also noteworthy as one of very sudden death, which induces me to make a few remarks on this subject.

Sudden death during infancy is a fact well known to pediatricians. The causes may be *obvious* or *undetermined*, the latter class of cases being quite numerous. During infancy the thread of life is slender and easily broken. The sensitiveness of the nervous system at this time, and the readiness with which reaction takes place to sudden impressions, followed by rapid lowering of the vital powers, is no doubt a powerful factor in bringing about a fatal result.

Hyperpyrexia would appear to be *per se* a cause of death. Nothing produces so readily serious vital depression in infants as an abnormally high temperature. In the onset of acute disease it may kill the child before the full development of the disease. In this way previously healthy children are cut off, and on post mortem examination no evident cause of death is apparent, sufficient time not having elapsed to show the existence of the disease.

Asphyxia may be the cause of death in several ways. Pulmonary collapse may cause sudden death. In lung disease, especially pleural effusion, I have seen on several occasions a fatal result coming on suddenly from collapse in the sound lung.

Laryngismus Stridulus is another cause in this connection. Asphyxia may be brought about by food passing into the air passages from imperfect deglutition. I lately had under my care a rachitic child suffering from laryngismus stridulus and neurosis, producing paresis of the muscles of deglutition, and who narrowly escaped death in this way. It was necessary to feed the child with a tube for eight days, after which the power of deglutition returned.

A CASE OF TETANUS NEONATORUM TREATED
WITH ANTITOXIC SERUM; DEATH.

By CHARLES V. BURKE, M.D., Newark, N. J.

BABY S. was born under the auspices of a midwife. On the afternoon of July 11, 1897, when it was seven days old, it "cried and refused the breast, and that night had convulsions."

I saw the baby on the 12th at 8 A. M. It was emitting short cries with almost every expiration; the slightest touch or movement threw it into a spasm, during which it was perfectly rigid, with face wrinkled as in pain, arms flexed across the breast and knees drawn up. When lifted by one foot, until resting only upon the occiput, the rigidity remained absolute. The mother said it had spasms "every few minutes."

Temperature was 99° F. in rectum, pulse 160, respiration 50. The stump of the cord had not healed, and was covered with a thin coating of sero-purulent matter; the surrounding skin was not reddened or inflamed.

The wound was cleansed and a wet carbolic dressing applied.

The bowels were emptied by an enema, and a pint of salt solution containing bromide of soda 10 grains and chloral 5 grains was thrown high up.

During these manipulations chloroform was used. Spasm was almost constant except under deep anesthesia.

Bromide of soda 5 grains and chloral 2 grains by the rectum every two hours was ordered. I obtained, as soon as possible, some of Gibier's anti-tetanus serum, and thereafter the record was as follows:

2.30 P. M.—T. 99°, P. very rapid, R. 60.

Had eight spasms since last seen (12 noon). Spasm is precipitated by a current of air from a fan, waved two feet from the child. Injected 10 cc. of serum, and gave bromide gr. 5 chloral gr. 2 every hour.

4 P. M.—T. 101°, P. very rapid, R. 60.

Had four spasms since last seen. Spasm on touch or fanning. Injected 10 cc. of serum. Bromide gr. 5 and chloral gr. 2 continued every hour.

5 P. M.—T. 100.4° , P. very rapid, R. 60.

Had four spasms since last seen. Spasm on touch or fanning. Injected 6 cc. of serum. Bromide and chloral continued every hour.

10 P. M.—T. 102° , P. very rapid, R. 60.

Had five spasms since last seen. Spasm on touch, not on fanning. Bromide and chloral continued.

12 M.—T. 102.4° , P. and R. very rapid.

No spasm since last seen. Spasm on touch. Bromide and chloral continued.

4 A. M.—T. 104.2° , P. and R. very rapid.

Had one spasm since last seen. Spasm on touch. Bromide and chloral continued.

At 8 A. M. the child died.

I would call attention to the rapid rise of temperature after the injections of serum were begun.

136 Bowery St.



EDITORIAL.

EXOPHTHALMIC GOITRE IN CHILDREN.

ALTHOUGH isolated cases of exophthalmic goitre have from time to time been described in children (e. g., by Rosenberg as long ago as 1865), the fact that its symptoms differ to some extent from those seen in adults has prevented its full importance from being recognized. The disease has, however, been more studied of late, particularly by Baldwin, A. Ehrlich and Kronthal, and our knowledge has been summarized in three important papers by Ferdinand Steiner, of Vienna, who has collected forty-four cases, including three of his own. He remarks that while one hysterical patient in eight is a child, a doctor is fortunate who sees exophthalmic goitre in a child once in fifty cases; the sexual proportion is rather more than two to one in favor of the female. The symptoms usually come on successively and not simultaneously; about a sixth of the cases are imperfect. In forty per cent. of cases the heart symptoms are the first to appear, in thirty-five per cent. the exophthalmos, in twenty-five per cent. goitre, and in ten per cent. tremor; sometimes, as the figures show, two symptoms appear simultaneously, or the disease may begin with secondary rather than cardinal symptoms. The disease reaches its height in children distinctly sooner than in adults.

Of the heart symptoms tachycardia is the most important and constant; curiously enough it is less marked in degree than in adults, the pulse rate seldom exceeding 100-120 per minute. Palpitation is also less complained of, although cardiac dilatation is present in half the cases. A third of the child patients develop a mitral systolic murmur as against two-thirds of adults.

Enlargement of the thyroid is constant in children, though

absent in fifteen per cent. of adults; in the former it is seldom very great. In about one-half the cases it affects both lobes equally, in the remainder the right is usually more enlarged. In sixteen per cent. of cases there is pulsation of the thyroid; in ten per cent. a murmur can be heard in it. The development of the goitre is much more rapid than in adults, the thyroid often reaching its maximum size within four to six weeks.

The exophthalmos is the least constant symptom of the triad, as in adults it is absent in one-fifth to one-sixth of the cases. It is as a rule less marked than in adults and is often imperfect or difficult to detect. It is almost exclusively bilateral and usually more marked on the left side than the right, thereby contrasting with the goitre. It is particularly noteworthy that von Graef's and Stellwag's signs are rarely present in children, the former being found only in six per cent. and the latter in ten per cent. Steiner¹ states that although no doubt due to a common cause they have never been observed together in a child. Actual ocular affections, such as ophthalmoplegia, superlacrimation, limitation of the field of vision and keratitis are in children rare concomitants, while Steiner asserts that nystagmus is absent; in our own experience, however, this is quite as common in children as in adults.

Tremors are more common in children, and particularly in girls, than in adults; they are of two kinds: the fine vibrating movement described by Charcot and Maire, and the choreiform tremor of Kahler. The latter is an affection of co-ordination and differs only from true chorea in being less extensive. The former tremor is present in one-eighth of all cases in children, the latter in one-fifth. Chorea itself is said by Möbius to be a mere accidental complication.

Of secondary symptoms digestive changes occur in about one-half of all cases of the disease, but only in one-third of

¹Steiner, *Wien. Med. Blätter*, 1897, No. 6. From this valuable paper most of the statistical information is obtained.

children affected by it. Diarrhea is by far the most common; in thirteen per cent. there is vomiting resembling that of hysterical origin. Anorexia, which is a symptom practically never found in adults, is present in ten per cent. of children. Dyspnea is the commonest of respiratory symptoms, but is less frequent than is usual in goitrous cases, being present only in twenty-nine per cent. Nasal disease, to which exophthalmic goitre is often attributed, is never associated with it in children.

Nervous symptoms are numerous and variable; hysterical stigmata are evident in more than half the cases, and are by Möbius held accountable for the majority of the nervous manifestations. Motor disturbances are rare, with the exception of tremor and chorea, and the reflexes are as a rule natural. Sensory affections are still more uncommon, headache being present in only thirteen per cent. and giddiness in ten per cent. Anesthesia and paresthesia are practically unknown, but insomnia, probably of hysterical origin, is present in twenty-five per cent. of cases.

Of the psychical changes, that in disposition is the most marked. The patient becomes restless and irritable, bad-tempered and untruthful; speech is hurried and the child flies from one pursuit to another without persisting long in any. More severe psychoses are rare.

Skin symptoms are fairly common; the epidermis is thin, and blushing is readily produced, the ears being particularly affected. Abnormal hidrosis is recorded in 10 per cent. of puerile cases, but abnormal pigmentation is excessively rare. The temperature is raised in 13 per cent. of cases, but this is usually due to some complication. Wasting is common, occurring in 25 per cent. of cases and running a parallel course to that of the other symptoms, with the improvement in which it as a rule abates.

To sum up, the points in which the exophthalmic goitre of children differ from that of adults are as follow: The develop-

ment of the disease proceeds more rapidly, the tachycardia is much less marked, the subjective sensation of palpitation is less conspicuous, the thyroid affection is constantly present, while the exophthalmic signs are confined to a relatively small proportion of cases. Sexual disturbances are absent, but a combination with chorea is relatively frequent. All the appearances which have a definite anatomical basis are constant, while the concomitant functional disturbances, mainly hysterical in type, are variable and inconstant, facts which harmonize with the slight and simple characters of infantile hysteria. We may suggest that if all cases of chorea were carefully examined with a view to the symptoms of exophthalmic goitre the latter would not be found so rare in children as is commonly supposed.

B. A.



SOCIETY REPORT.

NEW YORK ACADEMY OF MEDICINE.—SECTION ON PEDIATRICS.

Stated Meeting, November 11, 1897.

Congenital Angioma of the Palate.—Dr. W. M. BERKLEY presented a preliminary report upon such a specimen. He said that on November 15, 1896, an infant had been admitted to the Presbyterian Hospital about half an hour after birth, at or about full term, with a tumor projecting from the mouth. It was said to have been as large as a man's fist, smooth, glistening and lobular, and attached to the middle of the hard palate. It had been removed at once with an *écraseur* by Dr. A. J. McCosh. The patient did well for a time, but the discharge from the mouth set up a pneumonia, and the parents, becoming alarmed, took the child home, where it died on the fifth day. The specimen, having been preserved in formalin, had shrunk to about half its original size. It now measured 10 centimeters in length and 5 centimeters in width, and weighed $51\frac{1}{2}$ grams. On section, the tumor was found to be partly cystic and partly solid. The cysts originally held clear serum. At the point of attachment some of the palatal cartilage still remained. Under the microscope it was found to consist largely of blood vessels, lying in a finely reticulated tissue of the embryonal type. This tissue contained an immense number of round or oblong cells with large nuclei and many minute encapsulated groups of fairly typical and closely aggregated cartilage cells. The sheath was thin, and consisted of stratified epithelium, in some places squamous and in others columnar. The latter showed an indefinite process of ciliation. No part of the sheath examined contained hair. The tumor should probably be looked upon as a benign growth, with malposition of tissue elements, occurring during the growth of the fetus.

In connection with this case, the speaker said a review of the literature had brought to light two other interesting cases. In one of these a child died of suffocation at birth, and a tumor was found lying lengthwise above the epiglottis and attached to the tongue. It was apparently a hypertrophy of the structures normally present there. In the other case there was a congenital

tumor of the palate and vault, and the child did well after the removal of the growth. The latter was covered with lanugo hairs, and did not project far from the mouth. The child also had a partially cleft palate, but the tumor grew from the solid bone.

Dr. A. JACOBI remarked that the majority of large tumors in the mouth were usually teratomata, and as the specimen just presented was not of this variety, it was of more than usual interest.

A Supposed Primary New Growth of the Pleura.—

Dr. J. S. FERGUSON presented a girl of fourteen, who had first consulted him on July 19, 1897, for a lateral curvature of the spine which had first been noticed only two months before. Her family history was good, and she had been in perfect health up to the present illness. Since the present trouble began she had complained of nothing but the spinal curvature, but this had increased rapidly since it had been first noticed. Examination revealed slight lordosis and marked lateral curvature of the spine to the right, accompanied by elevation of the right shoulder; motion of the chest wall on the right side limited, and distinct bulging below and a little anterior to the lower angle of the right scapula. The left side of the chest was apparently normal, and there was no enlargement of the auxiliary lymph nodes, but those in the anterior cervical region were slightly enlarged. There were diminished vocal fremitus and respiratory sounds, with marked dullness and a distinct sense of resistance over the bulging area, and this area was surrounded by slightly increased resonance. There was no bronchial or harsh character to the respiratory sound, and the affected area was surrounded by a zone of puerile respiration. Examination of the blood, about two hours after eating, showed the ratio of the white to the red corpuscles 1 to 200, the hemoglobin 81 per cent., and a slight increase in the polynuclear forms at the expense of the mononuclear. On September 16 there had been noted an increase of the circumference of the chest at the level of the nipple, of half an inch. The other signs were about the same, except that the dullness and diminished respiratory murmur seemed to be more marked. There was slight increase in the eosinophiles at this time. During September the patient experienced occasional sharp pain beneath the right scapula for one or two days at a time. On October 31 it was noted that since the last measurement there had been an increase of five-eighths of an inch in the circumference and an extension upward of the

growth. The vocal fremitus was almost absent, and the dulness amounted almost to flatness. The respiratory murmur was harsh, but distant. An examination of the blood at this time showed the ratio of the white to the red corpuscles to be 1 to 478 (normal), the hemoglobin 94.4 per cent., and a still further increase of the eosinophiles and an increased number of the myelositcs. On November 9 paracentesis was performed near the angle of the right scapula, with negative result. Auscultation just prior to this operation revealed, for the first time, a few friction sounds over the affected area. The temperature had varied between 97.4° and 99.4° F., the pulse between 80 and 104, and the respirations between 19 and 21. His diagnosis of a new growth was based upon the unsymmetrical enlargement of the chest, the distant character of the respiratory sounds, the abnormal direct transmission of the bronchial sounds, indicating compression of the lung tissue, the surrounding area of pleuric respiration, the area of dulness beginning over the middle and not extending to the bottom of the pleural cavity, and not changing with the posture of the patient. The rapid extension of the area involved, the absence of marked polynuclear leucocytosis, which would accompany an inflammatory process, and the absence of fever, were additional points favoring such a view. The absence of leucocytosis was considered by some sufficient to exclude pleurisy with effusion and would certainly exclude empyema. The speaker said that such primary new growths in young children were very rare; he had only been able to find two reported cases in children under ten years of age.

Dr. A. JACOBI said that in spite of the very careful and elaborate clinical record, he could not convince himself of the presence of the tumor. There was dulness over a very small area, but there was good resonance over a large portion of the chest, and this resonance increased as the spine was straightened out by suspending the patient. He was of the opinion that dulness was due to the later development of the muscle on that side, and in part also probably to the rotation of the vertebræ. He obtained respiratory murmur all over, and of good quality except at the lower angle of the scapula. There was no such dulness or flatness as one would expect in the case of a large and constantly growing tumor. There was always some dulness in these cases of lateral curvature, and although there was more than the usual amount, it was also true that the scoliosis was rather more marked than usual. He believed that the history was unreliable in regard to the

commencement of this scoliosis, and that it had existed for a long time and was of that variety commonly found in these underfed children.

Dr. HOLT thought this was not the kind of lateral curvature observed as a result of pulmonary disease; it was nothing more than a rather rapidly increasing, but typical, rotary lateral curvature of the spine.

Dr. H. KOPLIK took the same view. He said that on suspending the patient the curvature diminished and the resonance was improved. The diminished respiratory murmur could be explained by the emphysema usually found in such cases, and the dulness by the increased muscle mass and the rotation of the vertebra.

Dr. N. E. BRILL said that from the physical signs he would not make a diagnosis of tumor, and he could but concur in the opinions already expressed.

Dr. FERGUSON, in closing, said that the diagnosis of new growth was not made as a positive diagnosis, yet from the positions of the areas and dulness he did not feel that he could explain the physical signs in any other way than by supposing the presence of such a tumor.

The Clinical and Pathological Interpretation of Choreiform Movements Called Tics, with Special Reference to their Treatment.—Dr. JOSEPH COLLINS read a paper with this title. He said that the word “tic” meant literally a “twitching,” and this generally consisted in an abrupt, rapid, usually uncontrollable movement, the result of contraction of individual muscles or groups of muscles which act together to fulfill some physiological purpose, and reproducing in an exaggerated form some physiological act. Tic had nothing more in common with chorea than with epilepsy. If we could drop the terms “choreic” or “choreiform” it would make this subject clearer. The twitchings of tics vary very greatly in severity. All tics might be classified primarily as: (1) Senile tic—an acquired form; and (2) early tic, which might be subdivided into: (a) degenerative, and (b) acquired. Early tic, whether degenerative or acquired, could be again divided into: (1) motor tics (both localized and generalized), and (2) psycho-motor tics. The motor tics were much less complex than the psycho-motor tics, but they had been much less carefully studied. The psycho-motor tics had been more extensively investi-

gated, but were relatively uncommon, especially in this country. Motor tics could be topographically classified, as, for example, into: fronto-orbicular tic, facial tic, tic of the diaphragm, or respiratory tic, bowing tic., etc. Very little was known etiologically regarding tic. It was known that tics of all kind occurred in childhood and early adolescence, and that the victims frequently had neuropathic brothers and sisters, and also that the twitching sometimes followed emotion or bodily fatigue. It manifests itself during the formative period of the individual's character. Dr. Collins said that he did not wish to be understood as considering tics as simply stigmata of degeneration. The simple motor tics might be due to many different conditions affecting the motor areas of the brain; the immediate antecedent condition was probably merely a nutritional depravity. Many "habit" movements were purely emotional movements, and were not true tics, although they might occur in persons who had initiated habit movements, probably because the individual was neuropathic and in an unstable condition. As a whole, tics were to be regarded as degenerative conditions. The tic itself was not inherited, but the neuropathic disposition could be so transmitted. He had full notes of fifty-seven cases of tic, and had seen a much larger number. Stigmata of degeneration were obvious in about 60 per cent. In the consideration of the subject he took it for granted that all abnormal people were divided into "superior degenerates" and "inferior degenerates." The former included many artists, poets and æsthetes, but in the latter the intellectual possessions were all below the normal, and these belonged to the class of dependents. Nevertheless the superior degenerate possessed many and well-known bodily stigmata. Some of these stigmata were: Changes in the shape of the extremities (for the particular race), malformations of the crania, deformities of the ears, changes in the shape of the ocular aperture, undue development of the lower jaw, the taurus palatinus and the excessively arched foot. These were as likely to be found in the superior degenerate as in the inferior degenerate suffering from tic. The psychical stigmata were much less clearly defined. Tic patients frequently had certain bodily conditions—e. g., ocular and refractive anomalies—which some had very illogically concluded could be remedied, and the tic thereby relieved. The twitching movements are readily differentiated from hysterical motor manifestations, for in the latter are to be

found tremor, contracture, tonic convulsions or flaccidity, not one of which occur in tic.

As to the prognosis, it might be noted that the natural tendency of the disease was toward progression, and in general that the earlier its development the less the chance of amelioration, and the more extensive the development and the more vital the parts affected the less the chance of a cure—in other words, a generalized motor tic is almost always progressive, and a tic of the diaphragm is more stubborn to treat than a tic of the face. The further removed the patient is from the normal, the less the chance of cure, and the longer the duration, the greater the difficulty of benefiting the patient. Persons suffering from tic and having psychical stigmata rarely become normal individuals.

The treatment naturally divided itself into two parts, viz.: The treatment of the twitching and the treatment of the neurosis, of which the twitching is but a manifestation. If it were an acquired condition the treatment would consist in removing the cause. Orthopedic and surgical measures were useful in the treatment of certain forms of both acquired and degenerative tic. The necessity of improving the general health was obvious. If the patient were a child, it should be taken from school and given plenty of outdoor life, and also good tonics. Sometimes the discipline of partial isolation, away from members of the family, was of considerable service, particularly if the child were emotional. All sources of pathological reflexes should be examined, and these deviations corrected, but the physician must ever remember that such "patching" could not replace the evolutionary work of centuries. The galvanic current to the side of the neck and massage were often of real service. Stretching the nerves, if thoroughly done, would naturally overcome the spasm. The treatment of the neurosis was the same as for other degenerative conditions, and was both hygienic and medicinal. The former should include measures intended to increase the potentiality of both body and mind. When drugs were elected, they should not be given half-heartedly; his experience had taught him that for chronic nervous diseases of a slowly progressive type, drugs, such as the bromides or the salts of copper or silver, must be given in the largest doses consistent with the maintenance of life, and should be continued for a long period. But they should never be relied upon alone. The education of children with tic should be such as to increase the stability of the nervous system, while the

nutrition was kept as perfect as possible. Manifestations of precociousness should be discouraged, and the importance of self-control should be inculcated. In some of the minor forms the patient could control the tic by an effort of the will, and this should be encouraged. In generalized tic the movements were sometimes very decidedly benefited by bicycle riding.

Dr. A. JACOBI said that if we had to deal with a tic complicated with, or resulting from, a profound neuropathic disorder the outlook was most dismal, because of our inability to do much for the original disease. He had seen many of these cases of tic and had cured them for the reason that he had paid a great deal of attention to the etiology. He had described many of these tics in an article published in 1886 in the *American Journal of the Medical Sciences*, under the title of "Partial or Generalized Chorea Dependent Upon Nasal Reflex." He had seen many cases of tic dependent, not upon cerebral degeneration, but solely on degeneration of the mucous membrane and sub-mucous tissue of the nose and naso-pharynx. He had seen a few cases of tic associated with nasal polypus in children. His attention had been called to this quite early, and since then a number of authorities had referred to the possibility of the occurrence of tic as a result of reflexes of the outlying branches of the trigeminus. He had seen himself numerous cases in which simple treatment of the nose had cured the tic. There were certainly a very few instances in which even epilepsy had been due to nasal irritation, and had been cured by attention to the nose and naso-pharynx—not simply benefited temporarily. He had made the mistake in referring to these cases as "partial chorea." Between tic and chorea there was this distinction, that tic was an involuntary contraction, and the irregular muscular contractions in chorea were always the result of intentional movements. He had seen in a few cases chorea develop out of these facial tics and pass down to the shoulders and arms, and even to the trunk. He wished to lay stress upon the fact that tic is not always the result of degeneration. All the stigmata enumerated in the paper were those said to be found in criminals. Cases of tic sometimes appeared in well-nourished children, although not usually.

Dr. B. SACHS said that he felt compelled to disagree with the reader of the paper on certain important points. He did not share Dr. Collins's horror of chorea in this connection, for there did not seem to him to be such a marked distinction between

chorea, tic and myoclonus. The conditions referred to by Dr. Jacobi seemed to him more closely related to choreic affections than to tic convulsif. Personally, he thought there was every possible difference between an ordinary facial tic and the so-called degenerative neurosis, or tic convulsif, as generally seen in younger subjects and as a family disease. He was rather sorry that the reader of the paper had attached so much importance to these newer doctrines regarding degeneration, which were still on trial. He was positive that the facial tics were found in a large number of individuals who did not present a single degenerative stigma, and, in his opinion, tic was not a degenerative disease. He would, however, agree with the reader of the paper in calling the tic convulsif a degenerative disease. The last case cited in the paper seemed to him much more typical of the ordinary myoclonus than the usual tic. In the treatment of these conditions the correct therapeutic principle seemed to be to give the smallest possible dose (for example, of the bromides) that would control the disease, and not, as had been stated in the paper, the largest dose that could be tolerated. He had not seen much benefit from the salts of copper and silver in the treatment of tics. The hypodermatic injections of atropia were at least temporarily beneficial, but he did not think even they were curative.

Dr. JOSEPH COLLINS, in closing the discussion, said that he was familiar with Dr. Jacobi's article on the connection of nasal disease with tic. Certainly all the pathological deviations should be sought for and corrected as far as possible, but it was generally admitted that such measures did not play an important part in the treatment. He would reiterate that his statistics would bear out the position that he had taken in regard to tic being degenerative and a clinical entity, and hence entirely apart from chorea.



ABSTRACTS.

ON CHOREA.

KRAFT-EBING (*tr. Allgem. Wien. Mediz. Ztg.*, 1897, *xlii*, 25) says that its occurrence is much more frequent in the female than in the male, the proportion being about three to one. It is noteworthy to mention that particularly in the female line, a hereditary predisposition to this disease is met with, so that a history of this disease can frequently be traced back in a family to the grandmother, the mother and the female issue of the latter. From this hereditary disposition the frequent recurrence of the disease might possibly be explained. It would, however, be a great mistake to take a hereditary predisposition always for granted. An acquired predisposition through the diseases of infancy, and especially through rachitis may be brought about. The same has frequently been observed in other diseases, and symptoms of rachitis (especially of the skull) are often found. The existing causes of an attack of chorea, in those predisposed to it, may be divided into bodily and psychic. Bodily causes may be shortly defined as the influences of debilitating, and especially of febrile diseases, combined with pain or disturbance of the general nutrition and of sleep. Acute rheumatism has particularly drawn the attention of doctors (especially of the English physicians) to the frequency with which it is followed by chorea. There is no doubt about this observation. The reason attention was drawn to it in England is that acute articular rheumatism is a frequent disease in that country. Endocarditis must be mentioned in the etiology of chorea as a link between rheumatic affections and the latter, being so frequently a complication of acute infectious articular rheumatism. Experience teaches that this endocarditis is not absolutely essential to the occurrence of chorea; there are plenty of cases in which chorea make its appearance in the absence of an endocarditis.

As regards the psychic causes which may produce chorea in the individual predisposed to it, various affections may be mentioned, but fright is the one which is most frequently followed by an attack of chorea. To discuss the symptomatology of this complaint, and to answer the question, what are the characteristic signs of chorea? we meet with some difficulties. The author tells us at the outset that chorea is essentially a motor neurosis, accompanied by spasmodic symptoms of a most peculiar kind. They do not occur in the

form of coarse spasms of the flexors and extensors, as we see them, for example, in epilepsy, but present more or less co-ordinated spasmodic movements. Thus they are frequently taken for voluntary motor actions, to the great detriment of these patients, whose gradually developing affection, during the first few days, or even during the first weeks, is looked upon as the antics of a naughty child. These spasmodic symptoms may be of two kinds; they either appear spontaneously or are complicated with other voluntary movements. The spontaneous spasms have the appearance of the seemingly natural movements of pulling, moving off, turning around and gesticulating; the spasmodic symptoms accompanying voluntary movements may be at once designated as ataxic. For this reason the extremities lose their usefulness and the patient sometimes becomes altogether helpless. In regard to the spontaneous spasmodic movements it may be said that they are absolutely independent of the will, and are very annoying to the patient. They must originate, therefore, in some internal conditions or irritation. The patient has no knowledge of the reason for the movements. Some ganglia cells must exist in the central organ, which are in such a condition of increased excitability that psychic irritations in the form of unknown associations or organic irritation suffice to bring on such movements. As regards the co-ordinated spasmodic symptoms which accompany the voluntary movements, these are not to be explained otherwise than by assuming that the law of isolated conduction is being violated. This brings us back to the theory that an abnormal condition of irradiation is present in the tissue of the nervous system, namely, a diminution of the power of resistance of the tissue.

If, after what has been said, we now inquire from what point we necessarily must imagine the chorea to emanate, we will probably repudiate the original view, which assumes the seat of the disease to be situated partly in the muscles, partly in the peripheral nerves, and partly in the spinal-cord. Chorea, as we know, is a disease which occurs semilateral, it may be said to be hemiplegic. It is a disease which is regularly accompanied by psychic symptoms, a disease in which the motor symptoms during sleep are held in abeyance. All these symptoms point to the brain and especially to the motor areas of the cortex as the seat of the choreic movements. This supposition is strengthened by the absence of any location in the central nervous system from which, by any kind of irritation, such complicated movements could be produced, excepting the cortex of the brain.

Chorea generally appears in the form of a hemichorea; it may, however, also involve the other side, but this half of the body will then always be the less affected side.

The *diagnosis* of chorea will not be difficult, if it be borne

in mind that we have to deal with a disease whose expression is essentially unilateral, involving the muscles of the face and tongue, in which co-ordinated spasmodic movements are present, which depart essentially from the gross picture of a simple spasm of the flexor and extensor muscles. The age also is to be taken into account, and the fact that during sleep the spasmodic movements are abolished. As regards the disturbance of the voluntary movements, it may be mentioned that the choreic movements are able to overcome the voluntary movements. This distinguishes chorea at once from the intentional tremor of multiple sclerosis and of ataxia in certain diseases of the spinal cord.

A moderately severe attack of chorea persists two to three months. Some rare cases are met with in which chorea exists many months, and even more than a year.

The *prognosis* of chorea is usually favorable. In the typical forms occurring in childhood and youth, we are justified in promising a cure in most cases. If patients suffering with chorea succumb, it is probably always due to some complication, of which endocarditis in conjunction with articular rheumatism and the occurrence of embolus are the most prominent.

From a *therapeutic* point of view a dietetic treatment may possibly be all-sufficient to bring about a cure. Rest of the body and the mind is important. These children must not go to school and parents should not treat them harshly. They should avoid excitement of any kind. A meat diet should be forbidden. A milk diet should be ordered, and as much fresh air as possible.

Electrotherapy is certainly useless in the treatment of chorea; *hydrotherapy* may do some good if not carried to extreme. Lukewarm baths of 26° to 22° R. employed for a short time, morning and evening, will exert a sedative influence on the nervous system. Severe cases of chorea should, however, be ordered to bed, and sleep must frequently be induced in these cases. For this purpose a wet pack is often beneficial. A bed-sheet is dipped in water of 20° to 30° R., well wrung out and wrapped around the patient, who is then covered by a woolen blanket. This will often induce perspiration and act very soothingly. Where this treatment is not successful in bringing on sleep, soporific medicines must be employed; of these *trional* is recommended as the most useful, in doses of one-half a gramme. *Sulfonal* is also occasionally effective, but does not seem as safe a drug as trional, especially for continued use. *Uretan* is also valuable in some cases. In very severe cases *chloral-hydrat* has given very good results, if used occasionally. *Amylenhydrat*, being an analogous drug, may also be used. It is without doubt one of the best sedatives. The only drug known to the author which possesses

the power to reduce the irritability of the nervous system or to produce favorable changes in the central organ by its influence on the vasomotor or trophic nerves, is *arsenic*. If Fowler's solution is employed it may be given in drop doses, one drop for each year of the child's life. Children bear the preparations of arsenic much better than adults. Lately the employment of *antipyrin* has been recommended. The author speaks of it only through the experience of others, and thinks it may be employed with benefit. *Nux vomica* and *strychin* seem occasionally to have a curative effect.

WHEN SHALL THE UMBILICAL CORD BE CUT?

WEWER (*Der Kinderarzt*, 1897, viii, 27) says that if there are dangerous symptoms on the part of the mother or the child (hemorrhages, asphyxia, etc), the umbilical cord should be immediately severed. However, in a normal birth, the most favorable time to cut the umbilical cord has not as yet been positively determined. We may benefit therefore by a consideration of the opinions of others.

Meyering (Erlangen) concludes after thorough investigation: The time at which the cord is cut exerts a marked influence on the quantity of blood retained by the placenta. In the early division of the cord, it amounts to 184 grammes, in the usual time of division 111 grammes, and in the late division 88 grammes. It follows therefore that the child, if the cord be tied at once, is deprived unnecessarily of 96 grammes of blood.

The larger the quantity of blood which the child receives from the placenta, the greater seems to be its growth in the first days of life. To increase the quantity of blood from the placenta to the child, remove it by Cr  d  's method. Meyering therefore advocates the late cutting of the cord.

L  bor Engel (Klausenburg) investigated this subject and came to the following conclusion: Aspiration during the first inspiration of the child and contraction of the uterus cannot be the causes which draw the blood from the placenta to the child. Therefore the action of the heart remains to be considered. Children who have the umbilical cord tied late, rest more quietly, do not nurse much, and have a redder skin. From weighing the child no conclusion could be arrived at as to the best time to tie the cord. In the cases of children in which the umbilical cord was tied *immediately* after birth, 17 out of 90, or 18.88 per cent., died during the first eight days, and in those in which the cord was tied late, 7 out of 74, or 9.45 per cent. died. Therefore he advocates the late tying of the cord.

A. Schucking (Halle) holds that the cord may be tied a few minutes after birth, because the physiological action of the loosening of the placenta undoubtedly carries the blood of the

latter to the child immediately following birth. This he considers due to the compression of the gradual loosening of the placenta and the first inspiration (aspiration and clearing the way for the circulation in the lungs).

Schiff found an equal number of blood corpuscles immediately after birth in those whose cord was tied early as well as in those whose cord was tied late. When it was tied late he found an increase in the blood corpuscles after three to four days amounting to one to two millions, while in early ligature a diminution of these were observed. This reserve blood in late ligature, which amounted to 70 to 90 kilogrammes, produces an engorgement of the blood vessels, through which an easier diffusion towards the lymphatic vessels, the tissues and the excretory channels is produced. Thus also an increased excretion of urine took place in the first few days in these cases. After a number of days the reserve blood-globules became totally disintegrated, and equal to the quantity found in the child whose cord was ligated early. Observe that the child with its reserve blood had to pass through an unnecessary process to reach the point which the child who had its cord ligated early had already reached without any difficulty. But the reserve blood causes not only an increased secretion of urine, a temporary irritation of the blood and lymphatic vessels of the tissues and of the kidneys, but it may directly cause a diseased condition, "an icterus of high degree." Fortunately this icterus is not hepatogenous, but caused by the disintegration of the reserve blood corpuscles. Therefore it seems that in the interest both of mother and child, an *early ligature* of the cord is to be recommended.

APHTHOUS STOMATITIS.

A. LEVI (*Wiener Medic. Blätter*, 1897, xx, 39). Stomatitis aphthous, according to most authors, is an acute inflammation of the mucous membrane of the mouth, characterized by a fibrinous deposit in the form of white or yellow spots of the size of a hempseed to that of a lentil. Billard and others consider this disease an inflammation of the mucoid follicles of the mouth. Vogel and Biedert look upon aphthæ as ulcerations, and divide them into aphthous and ulcerative stomatitis. Rilliet and Barthez consider them to be vesicles, which later on become ulcers (*Stomatite vésicoulcéreuse* of Rilliet and Barthez). Monti describes aphthous stomatitis as an inflammation of the mucous membrane of the mouth, which causes fibrinous deposits on and under the epithelium. In the author's opinion this explanation, as we shall learn from pathologico-anatomical investigations, is the only correct one.

Etiology and Pathogenesis.—Aphthous stomatitis is a disease of childhood. In the adult it is rarely met with, and then usually in women during the menstrual period, in child-

bed and during lactation. From the statistics of 111,143 cases we may form the following conclusions:

1. That aphthous stomatitis is present in children in 0.972 per cent., i. e., about 1 per cent.

2. That the disease more frequently attacks females than males. Levi does not believe that this circumstance, which has already been remarked by Monti and others, should be given any particular importance.

The disease is found in children of every constitution. He is not able to agree from his experience of ninety cases with Billard, Rilliet and Barthez, in their opinion that weakly and lymphatic children are peculiarly predisposed. Monti indeed has observed, and Levi confirmed it, that this disease is frequently met with in rachitic children. He does not believe, however, that this is due to a weak constitution, but is due to disorders of digestion to which these children are subject, and, as Monti suggests, to the great frequency of carious teeth. As regards the age, aphthous stomatitis is found even in infants at the breast, nevertheless it is very rarely met with before the period of dentition. Monti has never met with it in the new-born. In 496 cases which Levi has gathered he found the disease once in a child fourteen days old, and once in a child twenty-eight days old. Bednar found one case in 100 new-born infants; Bohn, three in 169 during the first month after birth; other cases are mentioned by Denis and Billard. Levi agrees with Monti that these cases were probably not true aphthous stomatitis, but cases of simple isolated aphthæ. Its rare occurrence before the period of dentition is probably due to the uniform nutrition during this period of infantile life and to the greater care observed by the mothers in regard to the cleanliness of the infant's mouth.

The inflammation of the mucous membrane, the increase in the secretion of saliva, the raised temperature of the mouth—which frequently accompany dentition—are conditions favorable to the development of micro-organisms and to the decomposition of food.

The season of the year also seems to play an important rôle in the etiology of aphthous stomatitis, for in the warmer months this disease is met with most frequently. Another important factor is the relation of this disease with epizootic aphthæ. Some authors identify both diseases and assign infection through the milk of animals suffering from aphthæ epizootica as the only cause of the disease.

Levi was fortunate enough to be able to demonstrate that this stomatitis occurred in children in whom an infection through milk could be positively excluded, as the latter was always carefully sterilized before use.

Aphthous stomatitis is a contagious affection; drinking

glasses, utensils, soiled clothing, etc., may become carriers of infection.

Diagnosis.—Bearing in mind that vesicles only are found and that the process of disease consists in depositing a fibrinous exudate in the shape of macules on different parts of the mucous membrane, it will be easy to make a diagnosis. Mistaking it for ulcerative stomatitis may, however, occasionally occur, as these two processes frequently exist together. The aphthæ, however, consist of an inflammation which remains localized on the superficial portion of the mucous membrane of the mouth with the deposition of a fibrinous exudate, while in ulcerative stomatitis, necrosis and loss of substance is characteristic of the disease, because we have to deal in the latter with a diffuse parenchymatous inflammation followed by an ulcerative necrosis. Aphthous stomatitis is exceedingly painful, ulcerating stomatitis gives the patient only a sensation of swelling and pulsation. From sprue, it may be distinguished by the course of the disease and by a microscopical examination. In Bechar's aphthæ, the seat of the aphthæ and the age of the patient will lead us to avoid mistakes.

Prognosis is favorable in the greater number of cases. It may, however, become very very grave when an edema of the glottis is occasioned by the formation of an excessive number of aphthæ in the posterior portion of the throat and in the confluent epidemic form.

Treatment.—Aphthous stomatis being an infectious disease, isolation of the patient is of the greatest importance in its prophylactic treatment. The milk should always be boiled or sterilized. The general condition of the child should be carefully looked after. Local or general disease (for example bronchitis, gastroenteritis, eczema, etc.) should at once be combated, for the greater number of cases of stomatitis is observed in these cases. The hygiene of the mouth is of the highest importance, as without doubt various micro-organisms will be formed here from the decomposition of food particles, etc. In the second year of life, and during the period of dentition particularly, the hygiene of the mouth should be observed with the greatest care, as the children at this time are not yet able to masticate thoroughly, and swallowing of all food particles is not perfectly accomplished, so that remnants of food frequently remain in the mouth. In fever patients also disintegration of the food occurs more rapidly. In these cases Vichy water or the following has a very good effect:

R	Sodii bicarbon.....	3.0
	Sodii borac.....	2.0
	Aquæ destill	100.0

Mix.

Antimycotic remedies, as salicylic acid, benzoic acid, boric acid, etc., are also to be recommended. Treatment should be both local and general. Locally the following solutions are recommended, with which the diseased portion may be painted four or five times a day:

℞ Sodii borac. 4.0
Tinct. myrrhæ. 8.0
Syr. morerum. 60.0

or,

℞ Borac. 4.0
Tinct. benzoe. 2.0
Aq. destill. 10.0
Syr. simpl. 20.0

or,

℞ Sodii phosph. 10.0
Aq. naphæ. 25.0
Mellis rosati. 50.0

or,

℞ Calc. chlor. 2.0
Mellis 20.0

or,

℞ Potas. chlor. 3.0
Aq. destill. 60.0

Baginsky recommends potassium permanganate (0.1 to 15.0), and claims a specific action for it. Hirtz recommends

℞ Acid. salicyl. 2.0
Alcohol. 10.0
Glycerin 20.0

or,

℞ Sodii salicyl. 20.0
Aq. destill. 100.0

Most cases will yield to any of these formulæ or heal even without treatment. Again, we meet with those which, in spite of early treatment, present a grave form of the disease as early as the second day.

Levi, from the observation of a great number of cases of stomatitis, maintains that no other remedy will give the same favorable results that chloric potash attains. It may be looked upon nearly as a specific. Its external use should be combined with its internal administration to obtain the very best results.

Monti's prescription is:

℞ Potas. chlor. 4.0
Aq. destill. 200.0
Tinct. myrrhæ. 3.0

M. Sig.—For washing out the mouth.
and

- ℞ Potas. chlor. 1.0
 Aq. destill. 90.0
 Syr. rubi idæi. 10.0
 M. Sig.—Keep on ice. A teaspoonful every two hours.

In stubborn and severely painful cases it will be necessary to use a solution of salicylic acid, according to Hirtz, or of corrosive sublimate.

- ℞ Hydrarg. bichlor. corr. 0.1
 Aq. destill. 50.0
 M. Sig.—For penciling the mouth.

Should this, however, fail, or should the aphthæ pass into an ulcerative form, a superficial cauterization with lapis muligatus or sulphate of copper must be resorted to. Where pain is exceedingly great, solutions of the tincture of opium, of extract of opium or of cocaine may be applied. Only cold liquid nourishment should be given, and this, especially in cases of recurrent aphthæ, which are nearly always accompanied by a state of irritation of the gastro-intestinal mucous membrane, should be as nutritious as possible.

DISTURBANCE OF RESPIRATION DUE TO MALFORMATION OF THE EPIGLOTTIS.

HACKSON REFSLUND (*Centralbl. f. Kinderheilk.*, 1897, ii, 66) said that we rarely find a malformation of the epiglottis as the cause of stenotic symptoms. One case only, that by Kussner, is known. For this reason the following case was of exceeding interest. The case was that of a child who presented a malformation of the epiglottis in the shape of a jews-harp, which appeared trunk-shaped on laryngoscopic examination as well as at the autopsy. The epiglottis could be very easily folded backward at the same time, and the chink of the glottis on account of this was narrowed down to such a small slit that great dyspnea was the result. The case becomes still more interesting for the reason that two of the patient's brothers and sisters, who have since died, are said to have breathed in the same manner. The child, aged two and one-half months, was admitted to the hospital on November 25. With each inspiration a more or less whistling sound is heard. Along with this the larynx is seen to descend, and a striking inspiratory retraction of the lower portion of the thorax can be seen. Occasionally, especially after some change in its position and after crying, a few free respiratory acts may be observed. Nothing abnormal can be discovered in the pharynx. The laryngeal picture demonstrates a lateral compression of the epiglottis on its descent, and also a backward movement on inspiration. During crying it again straightened out.' According to the report of the mother, two previous children, who died at the ages respectively of six months and

three-quarters of a year, suffered with this same anomaly of breathing. During the child's sojourn in the hospital breathing became somewhat easier temporarily. From December 23, however, it became again obstructed. On the evening of December 26 the temperature, which had up to this time been normal, suddenly rose to $39.8^{\circ}\text{C}.$; at the lower portion of the left lung, behind, could be heard numerous small and medium-sized vesicular crepitant râles. A distinct infiltration could not be demonstrated. The pulse was small and rapid, cough moderate, respiration fairly free; appetite was good. On January 3, the temperature became lowered; the pulmonary symptoms had resolved. The patient was quite emaciated. Respiration is fairly free, but occasionally a slight whistling is heard. The child had a relapse on January 24, and died from marasmus and heart failure.

Autopsy.—The larynx showed the following: The epiglottis measures 5 mm. in length, from the base of the tongue to its tip, and is divided into two parts by a furrow in its center. The divided portions measure at the base of the tongue 5 mm. each in breadth. The separated portions are very thin, 1 to $1\frac{1}{2}$ mm. The longitudinal furrow in its center is thinner still, and somewhat transparent. Along the whole extent of the latter a band of connective tissue exerting traction toward the base of the tongue is present. The epiglottis is doubled up at this furrow, so that its inner surfaces are in contact. The entrance into the larynx is thereby narrowed down to a small rhomb shaped opening. Besides the motion of the two halves of the epiglottis towards each other the latter may also be slightly turned backward, causing a still greater narrowing of the glottis, thus leaving only a rhomb shaped slit, which extends toward the center. Between the *ary-epiglottic cartilages* there is present a slit 7 mm. in length, whose borders lie closely together. The distance from here to the base of the epiglottis is 3 mm. In other respects the larynx seems to be normal.

We learn from this case that not only may a malformation of the epiglottis make the laryngoscopic examination difficult, but it may also become an obstruction to respiration. The suspicion of a stenosis of the larynx, probably caused, for example, by an edema of the glottis, by diphtheria or polypoid formations, may very easily be awakened. The absence of fever and of inflammatory symptoms, as well as of hoarseness, the dyspnea on inspiration alone, but especially a laryngoscopic examination, will be a protection against such an error. In stenosis of the trachea, both inspiratory and expiratory dyspnea would be found, and the accompanying movement of the larynx would be absent, thus easily excluding this affection. The reason why respiration became somewhat easier in the hospital might be explained by an increasing firmness of the epiglottis due to growth.

PRACTICAL NOTES.

Insanity Following Typhoid Fever.—COMBY reports a case of temporary insanity in a child following typhoid fever. The disease took the usual course in a three year old boy and ended in perfect defervescence on the twenty-sixth day. Then an intense maniacal delirium occurred, accompanied by visual hallucinations. This condition continued eight days, and then gradually improved, disappearing after two weeks. Cases of this kind are not rare in adults, but are exceptional in children. As the cause is probably a sequence of an anemia and poor nutrition, the best remedy will be a good, strengthening diet.—*Deutsche Medic. Ztg.*, 1897, xviii, 35.

Creosote in small doses in acute gastro-intestinal catarrh is warmly recommended by Dr. TH. ZANGGER (Zurich), who orders:

℞ Creosote puriss. gtt. iii.
Spts. vini. i.0
Aq. distill. 100.0

M Sig.—A teaspoonful three or four times a day in black coffee or peppermint tea before meals.

Branchial Fistula.—A case of congenital branchial fistula was presented by Dr. REINPRECHT at the Innsbruck Medical Society. It occurred in a boy eight years of age. A circular fistulous opening, about 3 mm. in diameter, is seen a thumb's breadth above the right clavicle somewhat to the outside of the mesial margin of the sternocleidomastoid muscle. A probe passed into this opening could be traced under the skin on the mesial side of the above mentioned muscle, into the neighborhood of the lower jaw. In the mouth no opening could be seen, nor could the point of the probe be felt. When, however, a colored fluid was injected into the outer opening it was seen to appear behind the right tonsil, between the latter and the palato-pharyngeal arch. As the fistula was a congenital one, it could only be one of the cervical branchia, judging from the direction of the fistula.

To Avoid Otitis in Scarlatina, according to COMBY, the pharyngeal cavity should be painted several times a day with a 10 per cent. solution of resorcin, by means of a cotton swab (this may occasionally cause oliguria with green or dark urine). Naphthol-camphor is also recommended for this purpose, as follows:

℞ B. naphthol. 10.0.
Camphor 20.0.
Glycerin 30.0.

M Sig.—For external application!

In the Treatment of Purulent Ophthalmia by the general practitioner, Dr. HELFREICH (Wurzburg) lays great stress on ocular antiseptics. The danger to the cornea lies in the fact that the secretion loaded with virulent germs may enter the tissue of the cornea by way of a lesion of the epithelial layer and may thus rapidly destroy the cornea. It is therefore of the greatest importance to wipe off, thoroughly but carefully, the accumulated secretion from the palpebral fissure. He does not practise irrigation of the conjunctival sac because it is quite difficult in an obstreperous child, and only temporarily retards the action of the gonorrheal secretion on the cornea. For this reason he advises a kind of permanent disinfection of the conjunctival sac. He orders the palpebral fissure to be wiped with a piece of cotton, dipped in a solution of corrosive sublimate (1:5,000), every quarter of an hour, and then, after drawing down the lower lid, corrosive sublimate vaselin (0.003 sublimate : 10.0 white vaselin) is carefully and thoroughly applied to the conjunctival sac by means of a glass rod. As soon as the ointment becomes liquefied, the entire corneal and conjunctival surface gets the continuous action of the sublimate, and is thus protected in the best manner. This simple measure is the only one used during the first five or six days in simple and mild cases. Should, during this time, in which the lids are yet brawny and the conjunctiva still looks tense and smooth, an increase of pus occur, he drops into each eye—while continuing the constant removal of pus and the application of the sublimate ointment—during the first six days, one drop of a one per cent. solution of nitrate of silver. As soon as the conjunctiva becomes relaxed and softer, and especially when the croupous-fibrinous deposit, which is so frequently present in the first stage, has disappeared, and true suppuration begun, he still continues the measures for disinfection and proceeds to a thorough irrigation once or twice daily with a two per cent. solution of nitrate of silver, everting the lids. Immediately after this cauterization, it is neutralized with a normal salt solution and the conjunctival sac is again filled with the corrosive sublimate vaselin. If this treatment proves inefficient on account of granulations the fold of the lid is carefully touched every day or every other day with a pencil of nitrate of silver, followed by irrigation with a normal salt solution. After this, the ointment is again applied. The application of cold in any form is condemned, as we ought to avoid all measures which are liable to lower the vitality of the cornea. If violent symptoms make their appearance in the first stage an ophthalmologist should at once be brought into the case.—*Centralblatt für Kinderheilk.*, 1897, ii, 362.

